THE MINERAL INDUSTRY OF MEXICO

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Mexico was the eighth most populated country in the world with 103.8 million people. Its nominal gross domestic product (GDP) was $676.5 billion[1] ($1,005 billion based on purchasing power parity). The real GDP increased by 4.4% compared with that of 2003 after a 1.6% increase in 2003 (revised). Mining (excluding petroleum) grew by 4.6%; this was the largest increase in 4 years. The industrial sector increased by 3.8%, which reflected increases in the construction and manufacturing sectors. Unemployment, however, continued to increase, reaching 3.8%. Mining investment in 2004 was $585.4 million, of which $158.1 million was for development of new projects, $105.4 million was for expansion of projects, and $93.7 million was for exploration (Cámara Minera de México, S.A. de C.V., 2005, p. 16; Instituto Nacional de Estadística, Geografíca e Informática, 2005§[2]; International Monetary Fund, 2005§; Secretaría de Economía, 2005§; World Bank, 2005§).

During the year, 105 new mining companies were registered with the Government. This number was 59% higher than in 2003 and represented the highest number of companies registered since 1998. The Government issued 2,195 mining claim titles, of which 1,608 were for exploration concessions and 587 were for mining concessions. In 2004, 21,705 claims were registered in Mexico (Secretaría de Economía, 2005§).

Government Policies and Programs

Under the Mexican Constitution, minerals are part of the national patrimony. The Mining Law, which governs Mexico's mining industry, is under Article 27 of the Constitution. The Mining Law of 1992 became effective in September 1992; it was amended in 1996 and again in April 2005. This Law covers exploration for and production and beneficiation of minerals. The Law permits up to 100% private equity ownership in exploration, development, and production even in commodities previously reserved for the Government, such as coal, iron, phosphorus, potassium, and sulfur. Hydrocarbons and radioactive materials are exempted from the Law.

Exploration concessions are granted for 6 years and are not renewable. Production concessions are awarded for 50 years and are renewable for a similar period. The Mining Law of 1992 eliminated concessions for beneficiation plants. In February 1999, revisions to the mining regulations were published. The regulations allow increases in private sector participation of the mining companies in Mexico. The regulations decrease the administrative procedures and establish time limits for most of the procedures. The Public Service Manual of Mining-Related Issues, which was published in July 1999, established administrative procedures for all mining matters and regulations. The responsibility of the mining sector belongs to the Secretaría de Economía. The Dirección General de Minas is responsible for revisions to the Mining Law and its regulations and for granting mining concession titles.

The Law of Foreign Investment was published in 1993 and was amended by decrees in 1995, 1996, 1998, and 1999. Its regulation was published in 1998.

Environmental Issues

The General Law of Ecological Balance and Environmental Protection (LGEEPA), which is the keystone of environmental legislation, was passed in 1988. Those environmental responsibilities that had resided in various Government agencies were transferred to the Secretaría de Medio Ambiente, Recursos Naturales y Pesca (SEMARNAP) in 1994. In 2000, the agency became the Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT).

Under SEMARNAT, mineral exploration and mining require a number of environmental permits and authorizations to conform to the statutes of LGEEPA. These requirements include a preliminary environmental impact statement for all major activities of the projects. SEMARNAT also requires all mines and plants to have an operating license as well as permits for explosives, hazardous materials handling, land use, water discharge, and well usage. Other regulations are concerned with noise, gas and dust emissions, dumps and tailings, storage of oil and fuel, and electrical transformers.

The regulation of environmental impact statements was initiated in 2000. Under the new rules, environmental impact reports for mines, beneficiation plants, and gas and oil pipelines must be approved by SEMARNAT.

Production

Mexico was an important mineral producer, ranking among the top world producers in a variety of minerals. On the basis of U.S Geological Survey production figures, it was the world's second ranked producer of bismuth (after China) with about 17% of the world's refined total. The world leader for many years in the production of mined silver, Mexico became the second ranked producer of silver (mine) in 2003 after Peru's production increased significantly and Mexico's production decreased. In 2004, when mine production remained flat, Mexico supplied about 13% of the world's mined silver. Mexico, which had been the world's leading producer of celestite, lost its ranking when Spain increased its production in 2002. In 2003, despite increased production and a decrease in production from Spain, Mexico remained the second ranked producer of this commodity. In 2004, however, when China

[1]Where necessary, 2004 values have been converted from Mexican pesos to U.S. dollars (US$) at the rate of 11.2648 pesos=US$1.00.
[2]References that include a section mark (§) are found in the Internet References Cited section.

increased its production and became the world's leading producer and Spain became the second ranked producer, Mexico ranked third after a significant reduction in output. Nonetheless, Mexico supplied almost 19% of the world's celestite. Mexico maintained its position as an important producer of many mineral commodities, which included cadmium, cement, copper, fluorspar, gypsum, manganese ore (metal content), molybdenum, salt, steel (26% of Latin America's output), sulfur, and zinc (mine).

Fueled by the high prices that prevailed in 2004, the value of mineral production (excluding petroleum and natural gas) was $5.87 billion; this was a significant increase compared with that of 2003 when production was $4.53 billion[3] (revised). Of the total, 51% ($2.98 billion) was from industrial minerals and 49% ($2.89 billion) was from metals. Production of sand and gravel (combined) was the highest in terms of value of the total mineral production (excluding petroleum and natural gas) at $860 million (15% of the total value); this was a 7% increase compared with that of 2003 when sand and gravel production was valued at $843 (revised). Among metals, copper ranked highest at $1 billion, which was about 35% of metal production and 17% of total mineral production. The value of copper increased by 75% as a result of price improvement and output increase during the year. Silver followed closely with a value of $665.8 million, which was also a significant increase (43%) compared with that of 2003. In general, the value of two-thirds of the reported industrial minerals and almost four-fifths of the reported metals increased in 2004 (Servicio Geológico Mexicano, 2005, ch. 2, p. 1.).

Mexico was the world's 6th ranked producer of crude and the 11th ranked producer of natural gas. In terms of total sales, the state company Petróleos Mexicanos, S.A. de C.V. (PEMEX) ranked eighth at $57.963 billion (Petróleos Mexicanos, S.A. de C.V., 2005, p. 57-59).

Trade

In 2004, Mexico's total exports were valued at $188.6 billion. The value of mineral exports (excluding petroleum and natural gas) was $4.6 billion, or 2.5% of the total. The value of metal exports totaled $4.1 billion, or 89% of total mineral exports (excluding petroleum and natural gas). Total imports were valued at $197.2 billion. Mineral imports (excluding petroleum and natural gas) accounted for $5.3 billion, or 2.6% of the total (Servicio Geológico Mexicano, 2005, p. 14-15).

Iron (in all forms) was the leading source of foreign exchange with $1.2 billion, or about 26% of total mineral exports, and was followed by silver ($812 million), gold ($575 million), and copper ($559 million). Industrial mineral exports were led by fluorspar ($499 million), marble ($131 million), and natural abrasives ($73 million). Metal imports were led by iron (in all forms) with 22% of the total import value ($1.18 billion) and was followed by aluminum ($1.09 billion), copper ($457 million), and silver ($239 million). Industrial mineral imports were led by precious and semiprecious stones ($209 million), natural abrasives ($74 million), and marble ($51 million). Coal and coke imports were valued at $329 million and $304 million, respectively (Servicio Geológico Mexicano, 2005, p. 110-122).

Mexico was a net importer of steel products. In 2004, Mexico exported 5.67 million metric tons (Mt) with a value of $3.5 billion. During the year, it imported 6.74 Mt with a value of $5.1 billion (Cámara Nacional de la Industria del Hierro y del Acero, 2005, p. 30, 33, 36, 39).

During 2004, the U.S. share of the Mexican mineral trade (excluding petroleum and natural gas) decreased. During the year, about 70% of Mexico's mineral exports went to the United States (80% in 2003), and 46% of its mineral imports originated from the United States (48% in 2003). In terms of current dollars, however, mineral exports to the United States increased by 30%. Exports to Chile almost quadrupled, those to the United Kingdom more than doubled, and those to Venezuela increased by 82%. Other important trading partners of minerals (excluding petroleum and natural gas) were Australia, Brazil, Canada, Chile, India, Japan, Switzerland, and Venezuela. Of those countries, Chile, Canada, and Venezuela had the highest values of mineral trade with Mexico after the United States (Servicio Geológico Mexicano, 2005, p. 115, 123).

Mexico was the world's seventh ranked exporter of crude petroleum. It exported 683 million barrels of crude petroleum with a value of $23.3 billion, which was a 26.9% increase in value and a 1% increase in volume compared with that of 2003. Mexico, however, was a net importer of natural gas and refinery products. Net exports totaled $17.8 billion. The average price for Mexican crude was $31.02 per barrel, which was a 25.27% increase compared with that of 2003. Of the total crude exports, 79% went to the United States followed by Spain (8%) and the Netherlands Antilles (6%) (Petróleos Mexicanos, S.A. de C.V., 2005, p. 45-46, 50-51).

Structure of the Mineral Industry

Government responsibilities for the mining sector are held by the Secretaría de Economía. The Secretaría de Energía is responsible for petroleum and electricity. The Dirección General de Minería is the highest office charged with mining policies with the purpose of fostering new investment and maintaining a healthy mining sector. It is supported by the Servicio Geológico Mexicano (SGM) which, until April 2005 was known as the Consejo de Recursos Minerales. Other agencies responsible for the mining sector are the Dirección General de Minería, the Dirección General de Fomento Minero, and the Fideicomiso de Fomento Minero. The SGM is responsible for promoting and conducting geologic, mining, and metallurgical research with the purpose of improving the use of the mineral resources within the country, identifying and estimating the potential mineral resources of Mexico, and integrating the inventory of Mexico's mineral resources. With the reorganization of the SGM, the new organization and changes in functions were published in the Diario Oficial de la Federación of April 28, 2005. The main functions of the Dirección General de Minería are to award mining concessions and to maintain the national mining and mapping registers. The Dirección General de Fomento Minero is responsible for promoting

[3]Where necessary, 2003 values have been converted from Mexican pesos to U.S. dollars (US$) at the rate of 10.7890 pesos=US$1.00.

the mining sector by using, for example, incentives for the domestic and foreign investment in the sector. The Fideicomiso de Fomento Minero is responsible for administrative, financial, and technical assistance to the mining sector by the Government.

The Cámara Minera de México is another important organization in the mining sector. It promotes the interest of the private sector and maintains a dialog between the private mining sector and the Government. Other prominent mineral-related organizations include the Instituto Mexicano de Aluminio, the Asociación Nacional de Productores de Cal, the Cámara Nacional de la Industria del Hierro y del Acero, and the Federación Nacional de Pequeños Mineros.

In 2004, employment in the mineral sector was 257,349; this was a 3.8% increase compared with that of 2003 and a 9.9% decrease compared with that of 2000. Of the total, 129,644 were employed in the manufacturing of nonmetallic mineral products; 67,441, in base-metal industries; 34,271, in the production of coal, graphite, and nonmetals; and 24,095, in the extraction and beneficiation of metals (Secretaría de Economía, 2005§). Nearly all miners were represented by the Sindicato Nacional de Trabajadores Mineros, Metalúrgicos y Similares de la República Mexica Sindicato Nacional de Trabajadores Mineros, Metalúrgicos y Similares de la República Mexicana. The Confederación de Trabajadores de México, the largest Mexican union, represented the cement employees.

Three diversified Mexican companies and a Canadian company dominated the production of nonfuel minerals (table 2). These were Empresas Frisco, S.A. de C.V., Grupo Acerero del Norte, S.A. de C.V., Grupo México, S.A. de C.V., and Industrias Peñoles, S.A. de C.V. Minas Luismín, S.A. de C.V. (a subsidiary of GoldCorp Inc., which merged with Wheaton River Minerals Ltd. of Canada) was a significant producer of precious metals.

A large number of foreign companies were active in exploration in Mexico, a few of which were in production or development phases. A significant portion of the exploration effort was for gold and silver.

Mexico's cement industry was dominated by Cementos Mexicanos, S.A. de C.V. (CEMEX), which was the world's third ranked producer after the LaFarge Group of France and Holcim Ltd. of Switzerland. Cementos Apascos, S.A. de C.V. and Cooperativa La Cruz Azul, S.C.L. were other important producers of cement in Mexico.

The production of crude petroleum, natural gas, and basic petrochemicals, which were reserved for the Government under Article 27 of the Constitution, was entrusted to PEMEX. It operated through several subsidiaries—PEMEX Exploration and Production, PEMEX Gas and Basic Petrochemicals, PEMEX International Marketing, PEMEX Petrochemicals, and PEMEX Refining.

Commodity Review

Metals

Copper.—In 2004, mine production of copper in Mexico increased by 14% to 405,500 metric tons (t). Mexico's copper industry benefited from the increase in copper prices as a result of increased demand, which was especially high in China and other Asian economies; a decrease in world inventories; a slow recovery of supply; and a weak U.S. dollar. Through its subsidiary Minera México, S.A. de C.V., which included Industrial Minera México, S.A. de C.V. (IMMSA), Mexicana de Cananea, S.A. de C.V., and Mexicana de Cobre, S.A. de C.V., Grupo México led copper production with 79% of the copper mine production. Cananea Mine, which was owned by Mexicana de Cananea and is located in the State of Sonora, was Mexico's leading producer. Cananea's output was 123,200 t of copper in concentrate and 50,200 t of copper by solvent extraction-electrowinning (SX-EW).

The second ranked producer in Mexico was Mexicana de Cobre's La Caridad Mine with 110,400 t of copper in concentrate and 21,800 t of copper by SX-EW. IMMSA's polymetallic underground mines (Charcas in the State of San Luis Potosi, San Martin in the State of Zacatecas, and Santa Barbara and Santa Eulalia in the State of Chihuahua) produced 15,000 t. Despite strikes at Cananea and La Caridad during the third quarter of the year and significantly higher energy prices, production from Grupo México's subsidiaries increased by 10% compared with that of 2003. Their sales increased by 77%.

Cananea has Mexico's largest copper reserves with 9.74 Mt of copper recoverable by concentration and 3.36 Mt in copper recoverable by SX-EW, which will be enough for 67 years of operation. Reserves from La Caridad were 2.01 Mt of copper recoverable by concentration and 550,000 t of copper recoverable by SX-EW. Grupo México's copper exploration properties included Bolaños in the State of Jalisco and El Arco in the State of Baja California Norte (Grupo México, S.A. de C.V., 2005, p. II, 14-15).

Industrias Peñoles, S.A. de C.V., which was one of Mexico's leading mining companies, was a small producer of copper in 2004. Its share of copper production remained at 3% of the country's mine output. The company continued development of several projects that will increase its copper presence in Mexico. Its construction of the 55,000-metric-ton-per year (t/yr) Milpillas underground copper project in the State of Sonora, which was scheduled to begin operations by the end of 2005, was 61% complete. The company began preparation of the ore bodies to be extracted during the first years of operation, the installation of crushing equipment, solvent extraction and electro-deposition, and the construction of the leaching pad. When fully operational, Milpillas will increase Peñoles' copper mine production by more than fivefold. In addition to Milpillas, Peñoles' joint venture with Chile's copper giant Corporación Nacional del Cobre de Chile (CODELCO) Minera Pecobre, S.A. de C.V. continued its exploration program also in the State of Sonora. At yearend, the company began diamond drilling exploration. Peñoles' total investment in Pecobre since 1999 totaled $24.7 million (Industrias Peñoles, S.A. de C.V., 2005, p. 6, 12, 47).

Baja Mining Corp. (formerly First Goldwater Resources Inc.) of Vancouver, British Columbia, Canada, was in the advanced stages of development of the Boleo copper-cobalt-zinc project in the State of Baja California Sur. The company, which completed a reverse takeover of Mintec International Corporation in May, became the owner of Minera y Metalúrgica del Boleo, S.A. de C.V., which was the owner of the deposit. The Boleo, which had been in production from 1868 to 1947, produced more than 800,000 t of copper through direct smelting. No byproducts were recovered during that period. Investment of $25 million in the property since 1992, which included a prefeasiblity study that evaluated the recovery of cobalt and zinc, was completed in 2002. In 2004, the company

began to negotiate contractual agreements for the feasibility study. In November, as part of the feasibility study, the company began analyzing data from the pilot plant in Lakefield, Ontario, Canada. Early tests resulted in copper recoveries of 90%, cobalt recoveries of from 80% to 85%, and zinc recoveries of from 70% to 75%. Mining of the deposit would be by underground and open pits of near surface ore at a rate of 2.6 million metric tons per year for 20 years. Copper cathode production would be at 50,000 t/yr, with cobalt production at 2,000 t/yr, and zinc sulfate production at about 9,000 t/yr. Boleo's measured and indicated resources with a cutoff grade of 0.5% copper were estimated to be 223.8 Mt with 1.63% copper equivalent (First Goldwater Resources, Inc., 2004, 2004§; Baja Mining Corp., 2004a§, b§; 2005§).

Another project that was near feasibility study status in 2004 was the Terrazas copper-zinc project in the State of Chihahua, which was owned by Constellation Copper Corp. through Minera Terrazas, S.A. de C.V. In-pit indicated resources were 58 Mt at grades of 0.353% copper and 0.570% zinc. The company planned to mine by open pit and to recover copper by SX-EW and zinc by iron reduction and direct electrowinning. Output of 18,000 t/yr of copper and 27,000 t/yr of zinc was planned (Constellation Copper Corporation, 2005§; Mining Record, 2005§).

Gold and Silver.—Mexico's mine production of gold was 21,824 kilograms (kg), which was a 7% increase compared with that of 2003, but a 17% decrease compared with that of 2000 when production was more than 26,000 kg. The leading producing state was Durango where La Ciénega Mine is located. The leading producer of mine gold was Peñoles with an output of about 10,500 kg (reported as 337,800 troy ounces) or 48% of Mexico's total. La Herradura Mine, which was owned by Minera Penmont S. de R.L. de C.V., was Mexico's leading gold mine; it produced more than 22% of Mexico's gold in 2004. Minera Penmont was a joint venture between Peñoles (56%) and Newmont Mining Corporation (44%). La Ciénega Mine, which was a polymetallic mine owned by Peñoles, was Mexico's second ranked producer of gold with more than 4,100 kg (reported as 133,510 troy ounces), or 19% of Mexico's gold mine production. Peñoles also produced gold from its Fresnillo (Proano), Naica, and Tizapa Mines (the latter in a joint venture with Dowa Mining Co., 39%, and Sumitomo Corporation, 10%) (Industrias Peñoles, S.A. de C.V., 2005, p. 15, 16, 47; Newmont Mining Corporation, 2005§).

Another important producer of gold was the precious metals company Minas Luismín S.A. de C.V. The company operated two mine units, the San Dimas Unit on the border of the States of Durango and Sinaloa and the San Martin Mine in the State of Queretaro. The San Dimas Unit included the San Antonio, the Santa Rita, and the Tayoltita Mines. Production from Minas Luismín in 2004 totaled about 4,120 kg (reported as 132,480 troy ounces). In 2004, Wheaton Minerals, which was the owner of Minas Luismín, and GoldCorp Inc. agreed in principle to merge through a share exchange takeover by GoldCorp (GoldCorp Inc., 2004; 2005§).

Minera Hecla, S.A. de C.V. produced 1,058 kg of gold from its San Sebastian Mine in the State of Durango; this was a 29% decrease compared with that of 2004. The reason for the decrease was a strike by the mill workers that began in October and continued throughout the rest of the year. Despite the strike, the mine continued to operate, and ore was stockpiled. Mining at San Sebastian, which had proven and probable ore reserves of only 30,300 t with 0.29 gram per metric ton (g/t) gold, was expected to cease in mid-2005, but exploration at the property will continue with an anticipated budget of $4 million for 2005 and 2006 with the expectation of resuming production in a few years. This silver and gold mine has been in production since 2001 (Hecla Mining Company, 2005§).

In February, Mexgold Resources Inc., of which Gammon Lake Resources Inc. owned 26.3%, acquired El Cubo gold-silver mine in the State of Guanajuato for $13.5 million cash and $7 million of debt acquisition. The mine, which had been in production for more than 200 years, had been producing at the rate of about 1,800 kilograms per year (kg/yr) of gold equivalent in the previous 5 years. Mexgold planned to immediately begin a 60,000-meter (m) exploration program, an 8,500-m underground development program, and to make improvements in mine design and mining methods. Production in 2004 was 644 kg (Flores, 2005; Gammon Lake Resources Inc., 2004b).

Gammon Lake also announced the completion of the bankable feasibility of its 100% owned Ocampo gold-silver project in the State of Chihuahua. As part of the study, estimated proven and probable reserves in open pit were about 44,500 kg (reported as 1.43 million troy ounces) of gold equivalent and about 25,900 kg (reported as 833,000 troy ounces) of gold equivalent underground, respectively. For Phase I of the project (the first 7 years), production was planned to begin in 2006 at about 2,000 kg/yr gold equivalent with an average cash cost of $151 per troy ounce (Gammon Lake Resources Inc., 2004a).

In October 2004, Glamis Gold Ltd. began mill production from its new gold mine El Sauzal in the State of Chihuahua, which it acquired though a merger with Francisco Gold Corp. Construction of the mine began in 2003. Production for 2004 totaled 778 kg (reported as 25,000 troy ounces) of gold. The company expected to produce about 5,290 kg (reported as 170,000 troy ounces) of gold in 2005; this would make it Mexico's second ranked producer of gold ahead of La Ciénega, which in 2004 was Mexico's second ranked gold producer. The company estimated that production from El Sauzal would average about 5,900 kg/yr of gold for a period of 10 years at an estimated total cash cost of $110 per troy ounce. At yearend 2004, ore reserves were estimated to be 18.19 Mt with 3.34 g/t gold and 3.72 g/t silver (Glamis Gold Ltd., 2005§).

In 2002, Mexico lost its ranking as the world's leading producer of mine silver to Peru. In 2004, Mexico maintained its position as the second ranked producer, although Australia and China were not far behind in output level. Mine production of silver remained at the same level (2,569 t) as that of 2003. Zacatecas, where the Proano Mine (Mexico's richest silver mine) is located, was the leading producing State with 1,345 t. The leading producing company was Peñoles, which produced 54% of the silver mined in Mexico during the year. In addition to Proano, Peñoles produced silver from Bismark, La Ciénega, Francisco I. Madero, Naica, Sabinas, and Tizapa. Peñoles' silver mine production decreased for such reasons as the temporary closures to develop new production areas in the Proano Mine and the Sabinas Mine and the lower silver grade at the Naica Mine. Output from Proano in 2004 was 983 t (reported as 31.6 million troy ounces); this was a 1% decrease from that of 2003 (Industrias Peñoles, S.A. de C.V., 2005, p. 14-15, 46-47). Other important silver mine producers were Grupo México, which produced about 428 t (reported as 13.8 million troy ounces) of silver,

most of it from its underground properties, and Minas Luismín, with about 207 t (Grupo México, S.A. de C.V., 2005, p. 21; GoldCorp Inc. 2005§).

Pan American Silver Corp. of Canada produced about 62,000 kg (reported as 2 million troy ounces) from its La Colorada Mine in central Mexico; this was more than twice the production achieved in 2003. Early in 2004, the newly constructed mill to process the oxide ore began commercial operation. Output was affected, however, by water problems in the sulfide plant (Pan American Silver Corp., 2005§).

Iron and Steel.—Mexico was the third ranked producer of iron ore in Latin America and the Caribbean (after Brazil and Venezuela). In 2004, production of iron ore was about 11.5 Mt. The largest iron ore mine was Pena Colorada in the State of Colima with a production capacity of 3.5 Mt. Pena Colorada was a joint venture between Hylsamex, S.A. de C.V. (through its subsidiary Hylsa, S.A. de C.V.) and Ispat International N.V. (through its subsidiary Ispat Mexicana, S.A. de C.V.). In addition, Hylsa owned three other iron ore mines though its subsidiary company Las Encinas, S.A. de C.V. These three mines [Aquila in Michoacan, Cerro Nahualt in Colima, and El Encino (also known as San Ramon)], had a production capacity of 1.8 million tons per year (Mt/yr). The company estimated that the mines in operation had sufficient reserves to operate for 11 years with additional reserves for a total of 18 years of operation (Hylsa, S.A. de C.V., 2005, p. 37-38).

Mexico, which was the second ranked producer of steel in Latin America and the Caribbean after Brazil, produced about 28% of the steel produced in the region. Total production capacity was 18.9 Mt. Production of direct-reduced iron and pig iron increased for the third consecutive year by 16% and 2% to 6.3 Mt and 4.3 Mt, respectively. Similarly, steel production increased by about 10% to 16.7 Mt. Ispat Mexicana, S.A. de C.V. (IMEXSA) was the leading producer with about 24% of the total steel produced in Mexico. Hylsa and Altos Hornos de México, S.A. de C.V. (AHMSA) produced 20% and 18% of the total, respectively. Production from minimills totaled 3.7 Mt. Following the international trend, which resulted in the highest prices for steel in 10 years, the price of steel in Mexico increased significantly; this was the result of increased economic activity worldwide, increased demand from China, and greater domestic demand. The apparent consumption of steel products increased by 7% to 17.1 Mt (Cámara Nacional de la Industria del Hierro y del Acero, 2005, p. 9, 12, 25, 42; Hylsa, S.A. de C.V., 2005, p. 9, 15).

Lead and Zinc.—Mexican mine production of lead was 118,484 t; this was a 15% decrease compared with that of 2003. The leading producing State was Zacatecas with 44% of the total output. The leading producer continued to be Peñoles with about 46% of the total. The company's mine production of lead decreased by 33% to 54,200 t. A significant portion of Peñoles' decreased lead output was attributable to the reduction from the Naica Mine, which decreased by about 46%. The mine, which was located in the State of Chihuahua, was Peñoles' (and Mexico's) leading producing mine (Industrias Peñoles, S.A. de C.V., 2005, p. 16, 47). IMMSA produced 23,500 t of lead from four of its mines. Santa Barbara, which is also located in the State of Chihuahua, was IMMSA's leading producing mine with 14,000 t; this was a 12% decrease from that of 2003 (Grupo México, S.A. de C.V., 2005, p. 22).

Mine production of zinc in Mexico increased to 426,360 t, which was a 3% increase compared with that of 2003. The leading producing State was Zacatecas with 49% of the output. Grupo México (through IMMSA) and Peñoles produced about 80% of Mexico's mined zinc. Peñoles continued to be the leading producer with 209,200 t (49% of Mexico's total mine zinc production); this was an 11% decrease from that of 2003. Francisco I. Madero was Peñoles' largest zinc mine with 31% of the company's output. In 2003, it had produced 35% of the company's mine zinc. The decrease was due in part to lower grade ore. Lower grades also affected Naica's zinc output. Peñoles decreased output was also the result of the lower production from Tizapa for which mining plans had to be changed as a result of instability in the mine (Industrias Peñoles, S.A. de C.V., 2005, p. 16, 47; Servicio Geológico Mexicano, 2005, p. 142).

Zinc mine production from Grupo México totaled 133,800 t (31% of Mexico's mined zinc in 2004). More than 53% of the company's production (71,000 t) was from the Charcas Mine in the State of San Luis Potosi. Grupo Mexico's second ranked zinc producing mine was Santa Barbara in the State of Chihuahua with 31,100 t (Grupo México, S.A. de C.V., 2005, p. 16-17).

Manganese and Ferroalloys.—During the year, production of manganese (metal content of ore produced) increased by almost 19% to 135,893 t. Minera Autlán, S.A. de C.V. produced battery-grade managanese dioxide, ceramic-grade manganese dioxide, manganese carbonate, manganous oxide, and oxide nodules. The company had three ferroalloy plants in Mexico. In these plants, the company produced medium- and low-carbon ferromanganese and silicomanganese. In 2001, Minera Autlán was forced to close two of its ferroalloy plants (Gomez Palacio and Tezuitlan) temporarily because of its financial difficulties and increased imports. The Gomez Palacio plant remained closed in 2002 and 2003. In 2004, the company benefited from a significant increase in steel production and the tight supply of ferroalloys. In the first semester of the year, average spot prices more than doubled. Minera Autlán was again listed in the Mexico stock exchange. Manganese mining increased, the Gomez Palacio plant was reactivated after 3 years and had significant improvements in the other two plants, and the company's entire production capacity was activated. During the year, production of ferroalloys increased by 29%. After years of struggle, the company had a net profit of about $37 million, had reduced its debt significantly, and was able to make necessary investments to reduce its costs, especially in energy (Minera Autlán, S.A. de C.V., 2005, p. 9-12).

Industrial Minerals

Cement.—Mexico's production was almost 35 Mt. The leading producer of cement in Mexico was CEMEX with 15 plants. In addition to CEMEX, two of the other world leaders in cement production, Holcim and Lafarge, had plants in Mexico. In 2003, Lafarge announced that it was building a new 600,000-t/yr cement plant in Tula, State of Hidalgo. The new plant will replace an existing high-cost 350,000-t/yr plant. The new plant was expected to be completed by 2006 and would cost an estimated $120 million. Construction of the plant began in 2004 (Lafarge Group, 2003; 2005, p. 63).

Fluorspar.—Mexico, which was the world's second ranked producer of fluorspar after China, produced almost 20% of the world's total. Fluorspar production increased by almost 12% compared with that of 2003. The State of San Luis Potosi was the leading producer with more than 80% of the country's production. The States of Coahuila and Durango produced the remainder. The leading producing company of fluorspar in Mexico was Cía. Minera Las Cuevas (a subsidiary of Grupo Industrial Camesa, S.A. de C.V). In May, Camesa acquired Química Fluor, S.A. de C.V., which was Mexico's leading producer of hydrofluoric acid (and the leading consumer of fluorspar) for $25 million. Química Fluor had a plant in the State of Tamaulipas with a capacity of 90,000 t/yr of hydrofluoric acid (Servicio Geológico Mexicano, 2005, p. 205).

Mineral Fuels

Coal.—Production of coal decreased by less than 1% to 11.3 Mt, of which 5.7 Mt was metallurgical. All the coal produced in Mexico was from the State of Coahuila. The principal producer was Minera Carbonífera Río Escondido, S.A. (a subsidiary of Altos Hornos de México, S.A. de C.V.) from two open pits and three underground deposits in Nava. Mexico's coal reserves totaled 934.1 Mt. Of these, Río Escondido (thermal coal) and Minerales de Monclova (metallurgical coal) had more than 55% of the total, but the highest reserves (34% of the total) were held by Materiales Industrializados, S.A. de C.V. (Cámara Minera de México, 2005, p. 109).

Natural Gas.—Despite having less than 1% of the world reserves, Mexico was the world's 11th ranked producer of natural gas. In the Americas, only the United States, Canada, and Argentina, in that order, produced more natural gas than Mexico (Petróleos Mexicanos, S.A. de C.V., 2005; BP p.l.c., 2005, p. 22). Production of gross natural gas increased by less than 2% compared with that of 2003 and production of dry natural gas increased by 5%. The Burgos Basin, which is located in the Region Norte, produced almost 24% of the country's total. The leading producing field was Cantarell in the Region Marina Noreste with almost 21% of the total (Petróleos Mexicanos, S.A. de C.V., 2005, p. 19).

Petroleum.—Mexico was the world's fifth ranked producer of crude oil. In the Americas, only the United States produced more crude petroleum than Mexico (Petróleos Mexicanos, S.A. de C.V., 2005, p. 57; BP p.l.c., 2005, p. 6). Production of crude and condensate in 2004 increased by about 1% after a 6% increase in 2003 compared with that of 2002. Mexico had 5,286 producing wells (345 more than in 2003). More than 83% of Mexico's crude petroleum was produced from offshore wells. The Cantarell oilfield was Mexico's largest field and produced 63% of Mexico's total production. Heavy crude accounted for 73% of the production. Light and super-light crude were about 23% and 4% of the total, respectively. Of the total crude distributed, 55% was sent to export terminals, and 37% went to domestic refineries; the petrochemical plants received 4%, and the maquiladora industry received 3% (Petróleos Mexicanos, S.A. de C.V., 2005, p. 14, 16-17, 21).

Mexico's hydrocarbon reserves have been decreasing. In terms of oil equivalent in 2004, reserves have decreased by 17% since 1999 to 48 billion barrels (Gbbl). On January 1, 2005, reserves totaled 46.9 Gbbl (33 Gbbl were crude), of which 14.8 Gbbl were proven reserves. Investment by PEMEX to increase reserves has been hindered by its high royalty and tax payments to the Government (Petróleos Mexicanos, S.A. de C.V., 2005, p. 12; U.S. Energy Information Administration, 2005§).

Refinery Products.—In 2004, PEMEX had six refineries in operation. Refinery production increased by about 5% compared with that of 2003. Despite efforts to increase the production capacity of refinery products by upgrading its refinery system, Mexico was a net importer of refinery products. The country has been upgrading its refinery system to improve the quality of gasoline and to expand the system's production capacity. Reportedly, the upgrade will change Mexico from depending on imports of gasoline and distillates to becoming a net exporter of those products. Upgrading two of its refineries (Minatitlan and Veracruz) would reduce fuel imports by 27%, and the upgrade of the Salina Cruz refinery could eliminate the need to import gasoline. Additional capacity is due to become available in 2008. PEMEX will need to invest $19 billion (U.S. Energy Information Administration, 2005§).

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TABLE 1
MEXICO: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2000	2001	2002	2003	2004
METALS						
Aluminum, metal:						
Primary		61,200	51,500	39,000	--	--
Secondary[e]		350,000	350,000	350,000	350,000	350,000
Total		411,200	401,500	389,000	350,000	350,000
Antimony:						
Mine output, Sb content		39	--	--	--	--
Metal[3]		52	81	155	434	503
Arsenic[4]		2,522	2,381	1,946	1,729	1,829
Bismuth:						
Mine output, Bi content[5]		1,112	1,390	1,126	1,064	1,014
Metal, refined		1,083	1,390	1,126	1,064	1,014
Cadmium:						
Mine output, Cd content		967	1,245 r	1,609	1,616	1,662
Metal, refined		1,268	1,421	1,382	1,590	1,594
Copper:						
Mine output, Cu content:						
By concentration or cementation		308,966	306,779	260,574	284,653	333,540
Leaching, electrowon		55,600	60,500	69,300	71,000	72,000
Total		364,566	367,279	329,874	355,653	405,540
Metal:						
Anode and blister		292,000 r	305,000 r	243,000 r	238,000 r	274,000
Refined:						
Primary		396,000	393,000 r	388,000 r	320,000	393,000
Secondary[e]		15,000	15,000	35,000	35,000	35,000
Total		411,000	408,000 r	423,000 r	355,000	428,000
Gold:						
Mine output, Au content	kilograms	26,375	23,543	21,324	20,406	21,824
Metal, refined	do.	24,074	25,749	23,594	22,177	24,496
Iron and steel:						
Iron ore, mine output:						
Gross weight	thousand metric tons	11,325	8,783	9,941	11,265	11,483
Fe content	do.	6,795	5,270	5,965	6,759	6,890
Metal:						
Pig iron	do.	4,856	4,363	3,996	4,183	4,278
Direct-reduced iron	do.	5,589	3,672	4,740	5,473	6,345
Total	do.	10,445	8,035	8,736	9,656	10,623
Ferroalloys, electric arc furnace:[6]						
Ferromanganese	do.	91	60	39	56	72
Silicomanganese	do.	108	74	73	81	103
Total	do.	199	134	112	137	175
Crude steel	do.	15,586	13,292	14,010	15,159 r	16,730
Rolled products[7]	do.	11,747	11,185	11,639	12,214 r	13,138
Lead:						
Mine output, Pb content		137,975	136,413 r	138,707	139,348	118,484
Metal:						
Smelter:						
Primary[8]		143,223	143,523	128,241	137,483	137,090
Secondary[e]		110,000	110,000	110,000	110,000	110,000
Total[e]		253,000	254,000	238,000	247,000	247,000
Refined:						
Primary[9]		142,856	143,345	128,201	137,483	137,090
Secondary		110,000	110,000	110,000	110,000	110,000
Total[e]		253,000	253,000	238,000	247,000	247,000

See footnotes at end of table.

TABLE 1--Continued
MEXICO: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2000	2001	2002	2003	2004
METALS--Continued						
Manganese ore:[10]						
Gross weight		435,000	277,000	245,000	320,000	377,000
Mn content		156,117	99,751	88,358	114,550	135,893
Mercury, mine output, Hg content[e]		15	15	15	15	15
Molybdenum, mine output, Mo content		6,886	5,518	3,428	3,524	3,731
Silver:						
Mine output, Ag content	kilograms	2,620,495	2,759,985	2,746,989	2,568,877	2,569,478
Metallurgical products, Ag content:						
In copper bars	do.	276,438	283,539	208,360	236,468	297,586
Mixed gold and silver bars	do.	249,136	195,086	183,383	193,453	238,513
Metal, refined, primary	do.	2,037,131	2,330,811	2,500,652	2,310,283	2,346,940
Tin:						
Mine output, Sn content		4	8	1	2	2 [e]
Metal, smelter, primary		1,200	1,107	1,756	1,769	1,700 [e]
Zinc:						
Mine output, Zn content		392,791	428,828	446,104	413,991	426,360
Metal, refined, primary		235,073	303,810	302,122	320,364	325,220
INDUSTRIAL MINERALS						
Abrasives, natural[11]		7,000 [e]	690	949	909	4,973
Barite		127,420	142,017	163,620	287,451	306,668
Cement, hydraulic	thousand metric tons	33,228 [r]	32,110 [r]	33,372 [r]	33,593 [r]	34,992
Clays:						
Bentonite		269,730	415,133	488,215	464,056	564,017
Common		9,689,936	13,257,459	13,258,195	13,242,893 [r]	15,127,163
Fuller's earth		51,685	148,194	147,064	152,917	129,502
Kaolin		532,268	681,709	745,498	798,407	800,000 [e]
Diatomite		96,448	69,474	62,322	53,395 [r]	59,818
Feldspar		334,439	329,591	332,101	346,315	364,166
Fluorspar:						
Acid-grade	thousand metric tons	335	343	343	409	402
Metallurgical-grade	do.	300	276	279	347	441
Total	do.	635	619	622	756	843
Graphite, natural, amorphous		30,330	21,442	14,065	8,730	14,769
Gypsum and anhydrite, crude (yeso)		5,654,060	6,237,056	6,739,834	6,986,491	7,000,000 [e]
Lime, hydrated and quicklime[e]	thousand metric tons	6,500	6,500	6,500	6,500	6,500
Magnesium compounds:						
Magnesite		335	250	--	--	--
Magnesia[12]		76,470	37,565	40,194	53,900 [r]	73,313
Mica, all grades		1,658	648	456	506	424
Nitrogen, N content of ammonia		758,706 [r]	581,154 [r]	558,960 [r]	438,948 [r]	559,782
Perlite		68,702	80,297	85,703	194,463	188,027
Phosphate rock[13]		1,052,464	787,283	4,764	5,500	350
Salt, all types	thousand metric tons	8,884	8,501	7,802	7,547	8,566
Sodium compounds:[e]						
Carbonate, soda ash, synthetic		290,000	290,000	290,000	290,000	290,000
Sulfate, natural, bloedite[14]		587,000	547,000	591,500	626,100 [r]	648,000
Stone, sand and gravel:						
Calcite, common		820,149	2,711,889	2,935,127 [r]	3,425,623	18,545,973
Dolomite		403,664	670,797	457,665	565,896	1,158,929
Limestone	thousand metric tons	58,267	63,346	59,421	56,253	72,763
Marble		1,034,529	4,155,745	3,615,728	3,529,274 [r]	2,824,181
Quartz, quartzite, glass sand (silica)		1,802,545	1,720,211	1,778,715	1,689,042	2,055,940
Sand	thousand metric tons	67,491	67,712	63,576	62,060	63,059
Gravel	do.	50,176	57,157	68,239	76,332	73,828
Strontium minerals, celestite		157,420	145,789	94,015	130,329	87,610

See footnotes at end of table.

TABLE 1--Continued
MEXICO: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2000	2001	2002	2003	2004
INDUSTRIAL MINERALS--Continued						
Sulfur, elemental, byproduct:						
Of metallurgy[e]	thousand metric tons	474	572	575	575	575
Of petroleum and natural gas	do.	851	878	887	1,052 [r]	1,122
Total[e]	do.	1,330 [r]	1,450	1,460 [r]	1,630 [r]	1,700
Talc		20,569	77,650	111,621	114,870	101,896
Vermiculite		--	--	300	312	218
Wollastonite		30,836	39,830	42,756	31,234 [r]	28,224
MINERAL FUELS AND RELATED MATERIALS						
Coal:						
Run of mine:	thousand metric tons					
Metallurgical	do.	6,372	5,242	5,097	6,648 [r]	5,786
Steam	do.	7,915	6,935	6,308	6,530	5,687
Total	do.	14,287	12,177	11,405	13,178 [r]	11,473
Washed metallurgical coal[e]	do.	2,259 [15]	2,000	2,000	2,000	2,000
Coke:[16]						
Metallurgical	do.	2,185	2,025	1,412	1,414	1,401
Breeze	do.	50	40	39	49	44
Total	do.	2,235	2,065	1,451	1,463	1,445
Gas, natural:						
Gross	million cubic meters	48,349	46,624	45,716	46,509	47,269
Marketed (dry)	do.	28,850 [r]	28,984	30,142 [r]	31,310 [r]	32,499
Petroleum:						
Crude	thousand 42-gallon barrels	1,099,380	1,141,355	1,159,642	1,230,415	1,234,795
Condensate, natural gas liquids	do.	159,870	158,045	148,920	152,570	161,330
Total	do.	1,259,250	1,299,400	1,308,562	1,382,985	1,396,125
Refinery products:						
Liquefied petroleum gas	do.	9,089	10,147	11,425	12,410	10,220
Motor gasoline	do.	143,445	142,423	145,343	162,425	170,346
Jet fuel	do.	20,185	20,696	20,696	21,900	22,667
Kerosene	do.	110	110	--	--	--
Distillate fuel oil, diesel	do.	96,871	102,784	97,419	112,420	118,516
Lubricants	do.	2,190	1,898	1,789	1,825	1,971
Residual fuel oil	do.	154,249	159,104	164,104	144,905	134,320
Asphalt	do.	11,352	10,476	10,512	9,490	9,928
Other, refinery fuel and losses	do.	17,263	14,854	14,416	5,840	28,870
Total	do.	454,754	462,492	465,704	471,215	496,838

[e]Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. [r]Revised. -- Zero.

[1]Table includes data available through December 1, 2005.

[2]In addition to the commodities listed, additional types of crude construction materials are produced, but output is not reported; available information is inadequate to make estimates of output levels.

[3]Sb content of antimonial lead and impure bars plus refined metals.

[4]Arsenic content of white and black (impure) arsenic trioxide.

[5]Refined metal plus bismuth content of impure smelter products.

[6]Reported by Cámara Nacional del Hierro y del Acero.

[7]Includes flat, nonflat, and seamless pipe steel products.

[8]Lead content of impure bar, antimonial lead, and refined metal.

[9]Includes lead content of antimonial lead.

[10]Mostly oxide nodules; includes smaller quantities of direct-shipping carbonates and oxide ores for metallurgical and battery applications.

[11]Based on exports comprising mostly pumice stone and emery (a granular, impure variety of corundum).

[12]Reported by Industrias Peñoles, S.A. de C.V. as the only major producer. Includes caustic, electromelt, hydroxide, and refractory.

[13]Includes only output used to manufacture fertilizers.

[14]Series reflects output reported by Industrias Peñoles, S.A. de C.V. plus an additional 40,000 metric tons of estimated output by other producers.

[15]Reported figure.

[16]Includes coke made from imported metallurgical coal.

TABLE 2
MEXICO: STRUCTURE OF THE MINERAL INDUSTRY IN 2004

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities[1]	Annual capacity
Aluminum	Aluminio y Derivados de Veracruz, S.A. de C.V. (private Mexican, 100%)	Smelter in Veracruz, Ver.	65.
Antimony	Cía. Minera y Refinadora Mexicana, S.A. (private Mexican, 51%, and Cookson Ltd., 49%)	San Jose Mine, Catorce, S.L.P.	365.
Barite	Barita de Sonora, S.A. [Grupo Acerero del Norte, S.A. de C.V. (GAN), 100%]	Mazatan, Son.	219.
Bismuth	Met-Mex Peñoles, S.A. de C.V. (Industrias Peñoles, S.A. de C.V., 100%)	Torreon, Coah.	1.2.
Do.	Minerales y Arcillas, S.A. de C.V. (private Mexican, 100%)	San Francisco del Huerto Mine in San Pedro, Coah., La Escondida and Angelita Mines and plant in Galeana	55.
Do.	Barita de Santa Rosa, S.A. de C.V. (private Mexican, 100%)	Muzquiz, Coah.	256.
Cement	Cementos Mexicanos, S.A. de C.V. (CEMEX) (private Mexican, 100%)	Ensenada, B.C.N.; Torreon, Coah.; Barrientos, D.F.; Arotonilco and Huichapan, Hgo.; Guadalajara and Zapotilic, Jal.; Hidalgo and Monterrey, N.L.; Tepeaca, Pue.; Tamuin and Valles, S.L.P; Hermosillo and Yaqui, Son.; and Merida,Yuc.	26,650.
Do.	Cementos Apasco, S.A. de C.V. (Holcim Group, 49%, and other, 51%)	Apasco, Mex.; Ramos Arizpe, Coah.; Macuspana, Tab.; Tecoman, Col.; Orizaba, Ver.; and Acapulco, Gro.	8,900.
Do.	Cooperativa La Cruz Azul, S.C.L. (private Mexican, 100%)	Cruz Azul, Hgo., Lagunas, Oax.	5,000.
Do.	Cementos de Chihuahua, S.A. de C.V. [Cementos Mexicanos, S.A. de C.V. (CEMEX), 36%, and private Mexican, 64%]	Chihuahua, Cuidad Juarez, and Samalayuca, Chih.	2,000.
Coal	Minerales de Monclova, S.A. [Altos Hornos de Mexico, S.A. de C.V. (AHMSA), 100%]	Mimosa and Palau Mines and Muzquiz washing plant at Palau, Coah., and coking plant at Monclova, Coah.	3,000.
Do.	Carboníferа de San Patricio, S.A. de C.V. (private Mexican, 100%)	Progreso, Coah.	1,314.
Do.	Industrial Minera México, S.A. de C.V. (IMMSA) (Grupo México, S.A. de C.V., 90%)	Nueva Rosita, Coah.	1,500.
Do.	Minera Carbonífera Río Escondido, S.A. [Grupo Acerero del Norte, S.A. de C.V. (GAN), 51%, and Mission Energy, 49%]	Mina I, Mina II, and Tajo I at Nava and Piedras Negras, Coah.	4,000.
Copper	Mexicana de Cobre, S.A. de C.V. (Grupo México, S.A. de C.V., 90%)	La Caridad Mine, smelter, refinery, and rod plant at Nacozari de Garcia, Son.	350 smelter, 50 SX-EW,[2] 300 refinery, 150 rod plant.
Do.	Mexicana de Cananea, S.A. de C.V. (Grupo México, S.A. de C.V., 90%)	Mine and smelter at Cananea, Son.	29,200 mill, 33 SX-EW.[2]
Ferroalloys	Cía. Minera Autlán, S.A. de C.V. (Grupo Ferrominero, S.A. de C.V., 54%; Minas de Basis, S.A. de C.V., 32%; BHP Ltd., 14%)	Plant in Tamos, Ver.	140.
Do.	do.	Plant in Teziutlan, Pue.	38.
Do.	do.	Plant in Gomez Palacio, Dgo.	35.
Fluorspar	Cía. Minera Las Cuevas, S.A. de C.V. (Grupo Industrial Camesa, S.A. de C.V.)[3]	Salitera (Zaragoza), S.L.P.	520.
Do.	Fluorita de México, S.A. de C.V. (Corp. Alfil, 51%, and Applied Industrial Minerals Corp., 49%)	Mines at La Encantada district and plant at Muzquiz, Coah.	150.

See footnotes at end of table.

TABLE 2--Continued
MEXICO: STRUCTURE OF THE MINERAL INDUSTRY IN 2004

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities[1]	Annual capacity
Gold, mine	kilograms	Cía. Fresnillo, S.A. de C.V. (Industrias Peñoles, S.A. de C.V., 100%)	Fresnillo/Proano Mine, Zac.	1,000.
Do.	do.	Peñoles, S.A. de C.V., 56%, and Newmont Mining Corporation, 44%)	La Herradura Mine, Son.	6,300.
Do.	do.	Minera Mexicana La Ciénega, S.A. de C.V. (Industrias Peñoles, S.A. de C.V.)	La Cienega Mine, Dgo.	3,700.
Do.	do.	Minas Luismín, S.A. de C.V. (Wheaton River Minerals Ltd.., 100%)	Tayoltita and Santa Rita, Dgo.; San Antonio, Sin.; San Martin, Qro.; and La Guitarra, Mex.	2,700.
Do.	do.	Cía. Minera de Santa Gertrudis (Grupo Ariztegui, 51%, and Phelps Dodge Corp., 49%)	Santa Gertrudis Mine, Son.	1,600.
Do.	do.	Exploraciones El Dorado, S.A. de C.V., 70%, and Minerales Sotula, 30%	La Colorada Mine, Son.	800.
Do.	do.	Cía. Minera El Cubo, S.A. de C.V. (Mexgold Resources Inc., 100%)	El Cubo Mine, Gto.	128.
Do.	do.	Sociedad Cooperativa Minero Metalúrgica Santa Fe de Guanajuato (private Mexican, 100%)	Guanajuato, Gto.	438.
Gold, refined	do.	Met-Mex Peñoles, S.A. de C.V. (Industrias Peñoles, S.A. de C.V., 100%)	Torreon, Coah.	22,700.
Graphite		Grafitos Mexicanos, S.A. (Cummings Moore Graphite Co. of the United States, 25%, and private Mexican, 75%)	Lourdes and San Francisco Mines, Son.	60.
Do.		Grafito Superior, S.A. de C.V. (Superior Graphite Co., 100%)	Covalmar, Santa Clara, and Rio Mayo Mines, and plant in Son.	25.
Gypsum		Cía. Occidental Mexicana, S.A. (private Mexican, 51%, and Domtar, Ltd. of Canada, 49%)	Santa Rosalia on San Marcos Island, B.C.S.	2,500.
Iron ore		Consorcio Minero Benito Juárez Peña Colorada, S.A. de C.V. (Hylsamex, S.A. de C.V., 51%, and Ispat International N.V., 49%)	Pena Colorada mine and pellet plant near Manzanillo, Col.	3,500.
Do.		Altos Hornos de Mexico, S.A. de C.V. (AHMSA) [Grupo Acerero del Norte, S.A. de C.V. (GAN), 74%]	La Perla Mine, Chih.; Hercules Mine, Coah.; and Cerro de Mercado Mine, Dgo.	5,000.
Do.		Siderúrgica Lázaro Cárdenas-Las Truchas, S.A. de C.V. (SICARTSA) (Grupo Villacero, 100%)	Ferrotepec, Volcan, and Mango deposits in Las Truchas project area and pellet plant, Mich.	2,350.
Do.		Hylsamex, S.A. de C.V. (Grupo Industrial ALFA, 100%)	San Ramon and Aquila Mines	1,500.
Lead and zinc		Industrial Minera México, S.A. de C.V. [(IMMSA) (Grupo México, S.A. de C.V., 90%)	Charcas, S.L.P.; San Martin, Zac.; Santa Eulalia, Chih.; Taxco, Gro.; Rosario, Sin.; Santa Barbara, Chih.; Velardena, Dgo; lead refinery at Monterrey, N.L.; and zinc refinery at S.L.P.	70 lead, mine 110 refined zinc.
Do.		Industrias Peñoles, S.A. de C.V. (private Mexican, 97%, and private U.S., 3%)	Mines at La Encantada, Coah.; Fresnillo, Zac.; Naica, Chih.; Bismark, Son; Rey de Plata, Gro. (Peñoles, 51%; Dowa Mining Co., 39%); metallurgical complex at Torreon, Coah., with silver, lead, and zinc smelter and refineries operated by Met-Mex Peñoles (Peñoles, 100%)	180 refined lead, 220 refined zinc.
		do.	Francisco I. Madero Mine, Zac.	100,000 zinc.
Do.		Minera San Francisco del Oro, S.A. de C.V. (Empresas Frisco, S.A. de C.V., 100%)	San Francisco del Oro, near Hidalgo del Parral, Chih.	15 lead, 21 zinc.
Do.		Minera Real de Angeles, S.A. de C.V. (Empresas Frisco, S.A. de C.V., 100%)	Noria de Angeles, Zac.	45 lead, 47 zinc.

See footnotes at end of table.

TABLE 2--Continued
MEXICO: STRUCTURE OF THE MINERAL INDUSTRY IN 2004

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities[1]	Annual capacity
Manganese	Cía. Minera Autlán, S.A. de C.V. (Grupo Ferrominero, S.A. de C.V., 81.75%, and private Mexican, 18.25%)	Molango, Naopa, and Nonoalco Mines, Hgo.	600 ore and concentrate.
Molybdenum	Mexicana de Cobre, S.A. (Grupo México, S.A. de C.V., more than 90%)	La Caridad Mine and molybdenum plant, Son.	6.
Petroleum[4] thousand barrels per day	Petróleos Mexicanos, S.A. de C.V. (PEMEX) (Government, 100%)	Comalcalco, Poza Rica, Ver., and Gulf of Campeche, Cam., Districts	3,500.
Salt	Exportadora de Sal, S.A. (Fideicomiso de Fomento 51%, and Mitsubishi Corp., 49%)	Solar salt complex at Guerrero Negro, B.C.S.	6,000.
Silver kilograms	Industrias Peñoles, S.A. de C.V. (private Mexican, 97%, and private U.S., 3%)[5]	Naica, Chih.; Fresnillo, Zac.; Las Torres, Gto.; La Cienega, Dgo.; Tizapa, Gro.; La Encantada, Coah.; and other locations	750,000.
Do. do.	Cía. Fresnillo, S.A. de C.V. (Industrias Peñoles, S.A. de C.V., 100%)	Fresnillo/Proano Mine, Zac.	950,000.
Do. do.	Industrial Minera México, S.A. de C.V. (IMMSA) (Grupo México, S.A. de C.V., 90%)	San Martin Mine, Sombrerete, Zac.; Taxco, Gro.; Charcas, S.L.P.; Santa Eulalia, Chih.; and refinery at Monterrey, N.L.	335,000.
Do. do.	Minera Hecla, S.A. de C.V. (Hecla Mining Co.)	San Sebastian Mine and Verladena plant, Dgo.	130,000.
Do. metric tons	do.	do.	450,000 mill.
Do. kilograms	Met-Mex Peñoles, S.A. de C.V. (Industrias Peñoles, S.A. de C.V., 100%)	Torreon, Coah.	1,240,000 refinery.
Do. do.	Pan American Silver Corp.	La Colorada Mine, Zac.	24,300.
Sodium sulfate	Química del Rey, S.A. de C.V. (Industrias Peñoles, S.A. de C.V., 100%)	Plant at Laguna del Rey, Coah.	620.
Steel	Altos Hornos de Mexico, S.A. de C.V. (AHMSA) [Grupo Acerero del Norte, S.A. de C.V. (GAN), 74%]	Steelworks at Monclova, Coah.	3,700 steel, 3,550 pellet.
Do.	Hylsamex, S.A. de C.V. (Grupo Industrial ALFA, 100%)	Steel works and direct-reduction units at Monterrey, N.L., and Puebla, Pue.; pelletizing plant in Col.	3,100 steel, 1,500 pellet.
Do.	DEACERO, S.A. de C.V. (private Mexican, 100%)	Steelworks at Saltillo, Coah., and Celaya, Gto.	1,450.
Do.	ISPAT Mexicana, S.A. de C.V. (Ispat International N.V., 100%)	SICARTSA II plant facilities at Lazaro Cardenas, Mich.	5,300 steel, 4,000 pellet.
Do.	Siderúrgica Lázaro Cárdenas-Las Truchas, S.A. de C.V. (SICARTSA) (Grupo Villacero, 100%)	Port Lazaro Cardenas, Mich.	2,350 steel, 1,850 pellet.
Do.	Tubos de Acero de México, S.A. (private Mexican, 100%)	Veracruz, Ver.	1,000.
Strontium (celestite)	Cía. Minera La Valenciana (private Mexican, 100%)	San Agustin Mine, Torreon, Coah.	50.
Sulfur	Petróleos Mexicanos, S.A. de C.V. (PEMEX)	Nationwide petroleum operations	890.
Tin[5]	Fundidora Marni, S.A.	San Luis Potosi, S.L.P.	NA.
Do.	PIZUTO, S.A.	do.	NA.

NA Not available.

[1]State abbreviations: Baja California Norte (B.C.N.), Baja California Sur (B.C.S.), Campeche (Cam.), Chihuahua (Chih.), Coahuila (Coah.), Colima (Col.), Distrito Federal (D.F.), Durango (Dgo.), Guanajuato (Gto.), Guerrero (Gro.), Hidalgo (Hgo.), Jalisco (Jal.), Mexico (Mex.), Michoacan (Mich.), Nuevo Leon (N.L.) Oaxaca (Oax.), Puebla (Pue.), Queretaro (Qro.), San Luis Potosi (S.L.P.), Sinaloa (Sin.), Sonora (Son.), Tabasco (Tab.), Veracruz (Ver.), Yucatan (Yuc.), and Zacatecas (Zac.).

[2]Solvent extraction-electrowinning.

[3]Grupo Industrial Camesa, S.A. de C.V. was owned by Banco Internacional (34%), Banco del Atlántico (34%), Banco Nacional de México, S.A. (17%), Noranda Inc. of Canada (4%), and Free Float (12%).

[4]Petróleos Mexicanos, S.A. de C.V. operated six refineries with an installed capacity of 1.68 million barrels per day.

[5]Smelter output from mostly imported concentrates.

TABLE 3
MEXICO: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity		Total	Destinations	
			United States	Other (principal)
METALS				
Alkali and alkaline-earth metals:				
Alkali metals		309,375	309,375	
Alkaline-earth metals		25,371	25,371	
Aluminum:				
Ore and concentrate		1,537,783	1,352,687	Guatemala 142,011; Colombia 18,148; unspecified 13,875.
Oxides and hydroxides		1,954,067	1,232,124	Guatemala 131,081; Costa Rica 116,335; unspecified 379,358.
Ash and residue containing aluminum		11,000	--	All to Cuba.
Metal including alloys:				
Scrap	metric tons	1,201,620	1,197,644	Canada 2,273; India 804; United Arab Emirates 513.
Unwrought		43,217,060	42,955,084	Cuba 103,339; Nicaragua 19,722; unspecified 117,893.
Semimanufactures:				
Powders and flakes		268,115	197,570	Canada 69,921; unspecified 624.
Rods, bars, profiles		60,801,764	59,732,252	Guatemala 382,233; Dominican Republic 232,819; Cuba 96,663.
Wire		3,359,102	3,048,073	Panama 343; Switzerland 93; unspecified 310,593.
Plates, sheets, strips	metric tons	112,858	111,401	Cuba 569; Colombia 356; Canada 231.
Foil		19,497,828	16,808,328	Costa Rica 1,121,140; Panama 626,937; Germany 293,687.
Tubes and pipes	metric tons	313,996	313,618	Guatemala 141; Ecuador 23; unspecified 121.
Tube or pipe fittings	do.	117,311	116,922	Guatemala 92; Cuba 65; Colombia 60.
Antimony:				
Ore and concentrate		911,812	911,812	
Oxides	metric tons	270,744	270,666	Italy 62; Costa Rica 15; Peru 1.
Metal including alloys, all forms		13,169,372	12,927,045	India 100,125; United Arab Emirates 47,265; unspecified 4,937.
Beryllium, metal including alloys, all forms		125	--	Unspecified 125.
Bismuth, metal including alloys, all forms		1,090,749	539,312	Belgium 551,437.
Cadmium, metal including alloys, all forms		2,093,851	816,187	United Kingdom 754,937; Belgium 435,179; Japan 38,015.
Chromium:				
Ore and concentrate		421,362	--	Italy 298,187; El Salvador 123,175.
Oxides and hydroxides		135,907	3,812	Cuba 81,468; Colombia 39,425; Venezuela 7,187.
Metal including alloys, all forms		431,378	431,187	Unspecified 191.
Cobalt:				
Oxides and hydroxides		65,444	--	Costa Rica 59,976; Chile 468; unspecified 5,000.
Metal including alloys, all forms		121,630	103,268	Nicaragua 9,437; Guatemala 8,812; unspecified 113.
Columbium and tantalum, metal including alloys, all forms, tantalum		351,439	337,562	Cuba 13,875; Venezuela 2.
Copper:				
Ore and concentrate	metric tons	158,233	43,197	China 15,114; Peru 7,177; Hong Kong, China 1,405.
Matte and speiss including cement copper		13,718,964	805,625	China 8,541,820; Switzerland 4,371,519.
Oxides and hydroxides		20,208,226	18,909,368	Brazil 751,187; Italy 110,484; Germany 92,429.
Sulfate		67,993,936	66,295,124	Canada 758,125; Italy 268,812; Spain 181,996.
Ash and residue containing copper		151,925	--	Guatemala 79,886; India 72,039.
Metal including alloys:				
Scrap	metric tons	1,011,753	1,004,746	Canada 2,384; India 1,230; United Arab Emirates 972.
Unwrought		41,655,326	41,382,018	Switzerland 219,996; Cuba 25,408; unspecified 5,353.
Semimanufactures:				
Powders and flakes		203,075	149,554	Peru 47,140; Germany 3,437; Guatemala 1,375.
Rods, bars, profiles		14,040,500	13,633,377	Guatemala 101,175; Cuba 69,253; unspecified 74,564.
Wire		28,074,280	27,036,088	Cuba 569,441; Colombia 124,441; Venezuela 88,878.
Plates, sheets, strips		41,650,744	39,627,400	Colombia 724,334; Venezuela 523,964; El Salvador 147,456.
Foil		28,979,016	27,936,268	Chile 186,585; Venezuela 146,799; Colombia 114,914.
Tubes and pipes	metric tons	260,296	250,882	Colombia 2,334; Spain 1,251; Venezuela 748.
Tube or pipe fittings	do.	127,340	125,653	Guatemala 252; Honduras 212; Colombia 127.
Gold:				
Waste and sweepings		164,615	164,615	

See footnotes at end of table.

TABLE 3--Continued
MEXICO: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity		Total	Sources	
			United States	Other (principal)
METALS--Continued				
Gold--Continued:				
Metal including alloys, unwrought and partly wrought		91,853	87,918	Italy 2,419; United Kingdom 1,366; Turkey 130.
Iron and steel:				
Iron ore and concentrate, excluding roasted pyrite	metric tons	546,189	299,925	Japan 132,100; Trinidad and Tobago 114,164.
Metal:				
Scrap	do.	3,154,445	3,134,107	Italy 11,597; Spain 2,742; Canada 1,494.
Pig iron, cast iron, related materials		3,412,409	3,230,577	Guatemala 78,058; Honduras 22,265; unspecified 48,291.
Ferroalloys:				
Ferrochromium		1,123,440	743,285	Netherlands 234,515; Sweden 119,828; Hong Kong, China 15,250.
Ferromanganese		20,579,521	16,325,062	Netherlands 1,143,437; Guatemala 610,875; Japan 604,937.
Ferromolybdenum		65,865	25,144	Netherlands 21,378; Hong Kong, China 19,343.
Ferrosilicomanganese		13,722,666	11,639,859	Guatemala 858,687; Colombia 801,500; The Bahamas 142,121.
Ferrosilicon		376,271	74,761	Guatemala 152,566; Luxembourg 49,453; El Salvador 47,683.
Silicon metal		102,265	81,656	Nicaragua 20,609.
Steel, primary forms	metric tons	3,273,189	2,596,696	Switzerland 249,762; Japan 166,797; United Kingdom 80,655.
Semimanufactures:				
Flat-rolled products:				
Of iron or nonalloy steel:				
Not clad, plated, coated	do.	1,376,929	1,094,738	Switzerland 139,331; Germany 105,296; Japan 9,688.
Clad, plated, coated	do.	768,571	693,565	Costa Rica 14,129; Chile 11,657; Panama 9,048.
Of alloy steel	do.	562,215	494,579	Germany 33,448; Hong Kong, China 13,862; Ecuador 4,713.
Bars, rods, angles, shapes, sections	do.	3,465,449	3,277,620	Germany 148,316; United Kingdom 15,293; Guatemala 7,214.
Rails and accessories		5,760,643	5,654,560	Guatemala 65,773; Chile 33,800; Cuba 3,312.
Wire	metric tons	369,748	348,458	Chile 8,399; Peru 3,121; Guatemala 2,335.
Tubes, pipes, fittings	do.	2,262,684	2,015,195	Canada 100,089; Uruguay 65,721; United Kingdom 21,633.
Lead:				
Ore and concentrate		21,141,394	--	Switzerland 11,326,125; France 7,400,144; Belgium 2,415,125.
Oxides		8,345,684	2,818,749	Brazil 5,155,941; Colombia 99,468; Belgium 96,191.
Ash and residue containing lead		1,375	1,375	
Metal including alloys:				
Scrap		584,875	574,375	Canada 10,500.
Unwrought		12,946,570	8,092,198	Switzerland 2,342,750; Japan 1,407,562; Peru 515,000.
Semimanufactures		8,870,707	8,464,241	Panama 293,875; Cuba 60,187; El Salvador 29,062.
Magnesium, metal including alloys:				
Scrap		5,261,433	5,261,433	
Unwrought		101,574	101,574	
Semimanufactures		693,949	693,949	
Manganese:				
Ore and concentrate	metric tons	11,548	5,420	Hong Kong, China 4,308; Spain 911; unspecified 512.
Oxides		2,423,332	690,062	Belgium 879,937; Canada 477,375; Guatemala 151,796.
Metal including alloys, all forms		1,596,979	948,312	Netherlands 587,375; Sweden 61,292.
Mercury		43,170	18,714	Guatemala 14,187; El Salvador 1,500; unspecified 8,375.
Molybdenum:				
Ore and concentrate:				
Roasted		15,672,269	3,121,250	Chile 11,371,941; Japan 1,115,125; Spain 63,953.
Unroasted		615,187	--	All to Australia.
Oxides and hydroxides		225,972	225,972	
Metal including alloys, semimanufactures		2,022	--	Unspecified 2,022.
Nickel, metal including alloys:				
Scrap		10,200,292	10,157,113	Canada 43,179.
Unwrought		29,096	636	Nicaragua 10,375; Panama 273; unspecified 17,812.
Semimanufactures		577,699	346,459	Venezuela 24,148; Costa Rica 2,687; unspecified 202,805.

See footnotes at end of table.

TABLE 3--Continued
MEXICO: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity		Total	Sources	
			United States	Other (principal)
METALS--Continued				
Platinum-group metals:				
Waste and sweepings		146,775	146,775	
Metal including alloys, unwrought and partly wrought:				
Palladium		3,608	2,331	Switzerland 1,277.
Platinum		88,617	88,557	Italy 60.
Iridium, osmium, ruthenium		5,600	5,600	
Rare-earth metals including alloys, all forms		643,562	643,562	
Selenium, elemental		312,436	--	Hong Kong, China 279,062; Australia 12,937; China 11,000.
Silicon, high-purity		19,722	--	All to Nicaragua.
Silver, metal including alloys, unwrought and partly wrought		37,587,880	37,292,988	Japan 142,615; United Kingdom 122,297; Germany 11,805.
Tin, metal including alloys:				
Scrap		1,965,937	1,955,437	Unspecified 10,500.
Unwrought		66,745	42,246	Cuba 6,875; Guatemala 242; unspecified 17,312.
Semimanufactures		2,514,499	2,207,046	Nicaragua 221,589; Cuba 66,074; unspecified 12,898.
Titanium:				
Ore and concentrate		8,875	--	Chile 5,375; Japan 3,500.
Oxides		609,413	378,000	Canada 67,558; Brazil 57,433; Colombia 43,144.
Metal including alloys, semimanufactures		1,588,406	1,587,624	Guatemala 675; Cuba 49; Germany 38.
Tungsten:				
Ore and concentrate		218	--	All to Cuba.
Metal including alloys:				
Powders (wolfram)		26,763	21,902	Saint Lucia 27; Grenada 22; unspecified 4,812.
Unwrought, bars/rods simply sintered, scrap		109	--	Cuba 105; unspecified 4.
Semimanufactures		469,792	467,096	Honduras 1,250; Guatemala 1,187; unspecified 114.
Vanadium oxides and hydroxides		1,322,062	809,500	Hong Kong, China 512,562.
Zinc:				
Ore and concentrate	metric tons	230,326	5,059	Switzerland 86,884; Japan 47,079; Belgium 29,261.
Oxides		48,596,728	42,273,752	Canada 2,553,750; Belgium 1,704,750; Chile 459,750.
Blue powder		5,757	--	Unspecified 5,757.
Ash and residue containing zinc		847,343	324,812	Brazil 336,625; India 185,906.
Metal including alloys:				
Scrap		8,650,553	5,788,710	India 1,527,500; Colombia 876,250; Canada 273,750.
Unwrought	metric tons	205,852	173,535	Costa Rica 9,399; Venezuela 7,716; Guatemala 4,241.
Semimanufactures		66,700,958	66,387,065	Guatemala 151,410; Cuba 105,089; Venezuela 40,500.
Zirconium:				
Ore and concentrate		656	--	Unspecified 656.
Metal including alloys:				
Unwrought, waste or scrap, powders		296	--	All to Germany.
Semimanufactures		18,167	8,875	Cuba 167; unspecified 9,125.
Other, ash and residue		6,462,080	3,344,999	Hong Kong, China 2,429,500; Brazil 336,625; India 257,945.
INDUSTRIAL MINERALS				
Abrasives, n.e.s.:				
Natural: Corundum, emery, pumice, etc.		1,492,866	1,008,283	Guatemala 297,662; Nicaragua 63,000; unspecified 65,945.
Artificial:				
Corundum		435,834	225,089	Cuba 93,574; Spain 86,203; unspecified 968.
Silicon carbide		3,796,991	1,109,250	Belgium 852,562; United Kingdom 786,562; Germany 557,812.
Dust and powder of precious and semiprecious stones including diamond	value	$3,954	$1,921	Costa Rica $1,745; unspecified $288.
Grinding and polishing wheels and stones		57,678,452	54,983,784	Cuba 495,962; Venezuela 455,405; Honduras 387,494.
Asbestos, crude		19,980	--	Unspecified 19,980.
Barite and witherite		820,249	327,937	Uruguay 484,500; unspecified 7,812.

See footnotes at end of table.

TABLE 3--Continued
MEXICO: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity		Total	Sources	
			United States	Other (principal)
INDUSTRIAL MINERALS--Continued				
Boron materials:				
Crude natural borates		44,557	--	Unspecified 44,557.
Oxides and acids		731,529	400,562	Cuba 115,851; Brazil 52,031; unspecified 106,934.
Cement	metric tons	1,197,029	996,293	Dominican Republic 187,866; Belize 8,523; Guatemala 1,269.
Chalk		347,801	--	Venezuela 97,070; unspecified 250,731.
Clays, crude:				
Bentonite		34,089,976	597,750	Germany 27,511,976; Colombia 1,960,312; Brazil 1,409,875.
Chamotte earth and Dinas earth		100,855	100,855	
Fire clay		193,069	3,750	Honduras 127,000; Guatemala 40,500; Bolivia 20,210.
Fuller's earth		42,640	--	Cuba 1,312; unspecified 41,328.
Kaolin		658,161	155,300	Cuba 317,812; Guatemala 82,031; Dominican Republic 29,792.
Diamond, natural:				
Gem, not set or strung	value	$280,925	$280,925	
Industrial stones	do.	$1,649	$1,649	
Dust and powder	do.	$3,341	$1,308	Costa Rica $1,745; unspecified $288.
Diatomite and other infusorial earth		20,869,964	2,420,687	Brazil 7,521,730; Argentina 3,524,375; Germany 2,915,000.
Feldspar		7,750,381	7,607,984	Italy 39,988; unspecified 102,409.
Fertilizer materials:				
Crude, n.e.s.		46,791,720	44,681,364	Colombia 594,250; Ecuador 309,375; Panama 226,933.
Manufactured:				
Ammonia		2,821,737	--	Guatemala 2,779,625; Cuba 32,558; unspecified 9,554.
Nitrogenous		12,931,761	12,086,229	Cuba 240,640; Costa Rica 147,390; Dominican Republic 68,300.
Phosphatic	metric tons	98	--	Dominican Republic 53; Honduras 31; unspecified 14.
Potassic	do.	324	60	Dominican Republic 44; Argentina 42; unspecified 149.
Unspecified and mixed		26,497,955	18,906,404	Panama 1,191,625; Guatemala 855,876; Chile 661,831.
Fluorine minerals, natural:				
Feldspar		7,750,381	7,607,984	Italy 39,988; unspecified 102,409.
Fluorspar	metric tons	508,399	227,378	Canada 111,193; Switzerland 89,911; Italy 30,153.
Leucite, nepheline, nepheline syenite		25,601	25,601	
Graphite, natural		12,268,017	11,346,437	Guatemala 896,562; Colombia 25,000; unspecified 18.
Gypsum and plaster	metric tons	934,878	454,424	Canada 478,850; Spain 630; Colombia 532.
Iodine		140,045	--	Guatemala 44,367; Cuba 19,496; unspecified 56,370.
Kyanite and related materials, andalusite, kyanite, sillimanite		539	--	Unspecified 539.
Lime		48,715,612	47,802,468	Cuba 543,647; Belize 267,187; Switzerland 76,000.
Magnesium compounds:				
Magnesite, crude		86,673	--	Cuba 85,226; unspecified 1,447.
Oxides and hydroxides	metric tons	22,846	7,679	Germany 4,350; Venezuela 2,313; United Kingdom 1,653.
Mica:				
Crude including splittings and waste		15,625	4,125	Guatemala 8,750; unspecified 2,750.
Worked including agglomerated splittings		95,831	62,780	Ecuador 4,625; Australia 1,062; unspecified 27,076.
Nitrates, crude		75,071	28,796	Guatemala 23,261; El Salvador 20,000; unspecified 2,733.
Phosphates, crude		97,663	--	Venezuela 73,441; unspecified 24,222.
Phosphorus, elemental		80,160	80,160	
Pigments, mineral, iron oxides and hydroxides, processed		7,246,044	6,741,593	Canada 115,304; Guatemala 107,308; unspecified 91,255.
Precious and semiprecious stones other than diamond:				
Natural	value	$678,330	$368,941	Hong Kong, China $275,551; Germany $28,567; Spain $3,638.
Synthetic	do.	$255,358	$254,822	Unspecified $536.
Pyrite, unroasted		118,914	118,914	
Quartz crystal, piezoelectric	value	$32	--	Unspecified $32.
Salt and brine	metric tons	12,290,852	12,166,068	Japan 58,140; Canada 43,822; Costa Rica 8,609.

See footnotes at end of table.

TABLE 3--Continued
MEXICO: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity		Total	Destinations	
			United States	Other (principal)
INDUSTRIAL MINERALS--Continued				
Sodium compounds, n.e.s., natural and/or manufactured:				
Soda ash		2,430,346	1,870,125	Cuba 135,296; Italy 113,804; Guatemala 104,085.
Sulfate	metric tons	144,133	12,358	Brazil 52,447; Venezuela 29,373; Colombia 16,861.
Stone, sand and gravel:				
Dimension stone:				
Crude and partly worked	do.	67,226	50,452	Italy 14,773; Hong Kong, China 619; unspecified Asia 601.
Worked	do.	228,391	219,922	Canada 5,951; Guatemala 515; Italy 468.
Dolomite, chiefly refractory-grade		1,567,346	1,179,062	Guatemala 205,687; El Salvador 80,558; unspecified 102,039.
Gravel and crushed rock	metric tons	7,836,630	7,788,795	Cayman Islands 47,552; Ethiopia 144; Saint Vincent and the Grenadines 59.
Limestone other than dimension		13,187	13,187	
Quartz and quartzite		173,166	173,108	Spain 58.
Sand other than metal-bearing	metric tons	792,886	791,416	Guatemala 890; Costa Rica 186; El Salvador 113.
Sulfur:				
Elemental:				
Crude including native and byproduct	do.	549,981	549,634	El Salvador 261; Honduras 60; Cuba 26.
Colloidal, precipitated, sublimed		240,800	--	Cuba 200,000; Guatemala 40,800.
Dioxide		8,665,487	8,657,175	Peru 8,312.
Sulfuric acid	metric tons	594,688	405,065	Switzerland 184,800; Guatemala 4,239; Honduras 240.
Talc, steatite, soapstone, pyrophyllite		309,460	--	Guatemala 204,847; Cuba 97,863; unspecified 6,750.
Vermiculite, perlite, chlorite		2,016,289	158,304	Guatemala 1,198,937; Chile 301,062; Brazil 121,839.
Other, slag and dross, not metal-bearing		6,865,814	5,585,585	Guatemala 596,956; India 577,562; Brazil 52,402.
MINERAL FUELS AND RELATED MATERIALS				
Asphalt and bitumen, natural		49,609	--	Guatemala 36,484; Spain 13,125.
Carbon black	metric tons	51,378	20,006	United Kingdom 7,570; Germany 5,819; Ecuador 5,112.
Coal:				
Anthracite		204,277	--	El Salvador 172,117; Cuba 32,160.
Lignite including briquets		79,448	--	Argentina 60,531; Guatemala 18,917.
All grades including briquets		283,725	--	El Salvador 172,117; Argentina 60,531; Cuba 32,160.
Coke and semicoke		2,007,601	--	Guatemala 2,007,062; unspecified 539.
Gas:				
Manufactured		50	50	
Natural:				
Gaseous		4,660,955	4,643,296	Cuba 17,367; unspecified 292.
Liquefied		252	--	Unspecified 252.
Peat including briquets and litter		22,074	22,074	
Petroleum:				
Crude	thousand metric tons	92,227	72,827	Spain 6,827; Netherlands Antilles 3,221; Aruba 2,531.
Refinery products:				
Liquefied petroleum gas		47,071,706	38,920,737	Belize 8,098,226; Guatemala 35,640; unspecified 15,870.
Mineral jelly and wax		857,334	410,375	Colombia 199,968; Chile 79,398; Venezuela 65,976.
Asphalt		69,456,144	59,344,536	Guatemala 10,064,867; Costa Rica 29,843; Nicaragua 16,902.
Bitumen and other residues		72,643,252	62,531,473	Do.
Bituminous mixtures		829,101	390,062	Belize 141,972; Guatemala 119,789; Cuba 45,542.
Petroleum coke		393,842	62,285	Switzerland 177,480; Guatemala 97,078; South Africa 34,335.
Unspecified	metric tons	8,518,049	5,567,097	Aruba 2,398,321; Panama 206,065; unspecified 108,780.

Source: United Nations Statistics Division, Commodity Trade Statistics Database (COMTRADE), accessed at URL http://unstats.un.org/unsd/comtrade/dqBasicQueryResults.

TABLE 4
MEXICO: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity		Total	Sources	
			United States	Other (principal)
METALS				
Alkali and alkaline-earth metals:				
Alkali metals		945,275	925,562	France 2,250; Spain 1,187; China 691.
Alkaline-earth metals		1,359,239	1,060,437	Republic of Korea 131,261; China 86,546; France 77,707.
Aluminum:				
Ore and concentrate		44,915,748	5,875,562	Guyana 1,618,062; Brazil 1,593,812; France 262,562.
Oxides and hydroxides	metric tons	180,746	149,152	Venezuela 24,274; Canada 1,695; Germany 1,557.
Metal including alloys:				
Scrap		99,714,608	81,880,312	Venezuela 9,000,511; Colombia 3,979,500; Belize 1,333,375.
Unwrought	metric tons	939,031	718,935	Venezuela 150,095; Canada 43,071; Brazil 11,640.
Semimanufactures:				
Powders and flakes		1,897,275	1,558,937	Slovenia 104,948; India 104,121; Germany 87,706.
Rods, bars, profiles	metric tons	2,005,223	1,972,007	China 10,567; Republic of Korea 8,543; Finland 2,289.
Wire	do.	173,874	159,839	Venezuela 8,217; Canada 4,607; Germany 363.
Plates, sheets, strips	do.	3,068,219	3,037,039	Germany 7,584; Canada 4,375; Republic of Korea 2,870.
Foil	do.	1,672,266	1,573,437	Republic of Korea 34,706; Japan 28,350; China 9,519.
Tubes and pipes	do.	2,859,175	2,843,472	Germany 3,787; Japan 3,444; unspecified 2,304.
Tube or pipe fittings	do.	555,709	540,873	Germany 6,304; Japan 3,501; France 3,108.
Antimony:				
Ore and concentrate		20,386	--	Guatemala 20,339; unspecified 47.
Oxides	metric tons	9,414	1,955	South Africa 2,585; Bolivia 1,696; China 1,635.
Metal including alloys, all forms		7,170,011	4,516,233	China 2,041,648; Germany 314,687; Slovenia 122,109.
Arsenic, metal including alloys, all forms		65,812	25,148	China 40,664.
Beryllium, metal including alloys, all forms		1,572,762	1,565,000	Unspecified 7,762.
Bismuth, metal including alloys, all forms		474,565	464,500	Republic of Korea 8,500; Germany 1,062; unspecified 363.
Cadmium, metal including alloys, all forms		99,957	95,191	Unspecified 4,766.
Chromium:				
Ore and concentrate		15,956,835	7,591,851	South Africa 3,425,062; Philippines 3,359,000; China 1,375,875.
Oxides and hydroxides		10,018,641	8,817,866	Spain 558,304; Republic of Korea 201,429; China 146,202.
Metal including alloys, all forms		3,792,504	3,535,187	China 73,308; Germany 71,007; Australia 51,213.
Cobalt:				
Ore and concentrate		17	--	All from Mexico.
Oxides and hydroxides		249,224	80,835	Belgium 64,781; Finland 57,011; China 34,222.
Metal including alloys, all forms	metric tons	1,208	1,086	Congo (Brazzaville) 53; France 18; Republic of Korea 18.
Columbium and tantalum, metal including alloys, all forms, tantalum		3,592,446	3,585,062	Japan 6,062; United Kingdom 1,187; unspecified 132.
Copper:				
Ore and concentrate		87,569	35,632	Germany 51,937.
Matte and speiss including cement copper		9,509,526	9,509,526	
Oxides and hydroxides		872,162	749,437	Colombia 76,539; China 22,941; Chile 21,199.
Sulfate		772,289	623,500	Germany 47,281; unspecified Asia 20,250; unspecified 81,258.
Metal including alloys:				
Scrap		34,619,680	26,973,984	Chile 5,390,421; Belize 700,062; India 526,500.
Unwrought	metric tons	195,005	69,757	Chile 119,936; Peru 5,072; Italy 71.
Semimanufactures:				
Powders and flakes		4,818,940	4,010,562	Spain 362,558; Japan 136,42; Germany 106,183.
Rods, bars, profiles	metric tons	190,871	184,389	Japan 1,857,476; Chile 1,770,527; Canada 809,764.
Wire	do.	744,921	660,759	Japan 28,704; Republic of Korea 27,189; China 9,012.
Plates, sheets, strips	do.	748,842	726,783	Japan 6,226; Republic of Korea 3,839; China 3,512.
Foil	do.	1,075,955	1,041,458	China 13,218; Japan 10,970; Republic of Korea 4,501.
Tubes and pipes	do.	2,447,852	2,423,637	China 7,867; Republic of Korea 4,780; Sweden 3,042.
Tube or pipe fittings	do.	2,294,281	2,203,570	Israel 19,778; China 18,184; Japan 15,687.

See footnotes at end of table.

TABLE 4--Continued
MEXICO: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity		Total	Sources	
			United States	Other (principal)
METALS--Continued				
Gold:				
Waste and sweepings		30	--	All from Mexico.
Metal including alloys, unwrought and partly wrought		9,993,935	9,491,658	Japan 441,053; Netherlands 24,286; India 23,944.
Iron and steel:				
Iron ore and concentrate:				
Including roasted pyrite	metric tons	3,660,812	1,579	Brazil 3,023,754; Peru 547,731; Venezuela 48,230.
Excluding roasted pyrite	do.	3,660,745	1,512	Do.
Pyrite, roasted		66,917	66,917	
Metal:				
Scrap	metric tons	2,039,603	1,711,459	India 242,662; Canada 35,060; Japan 15,371.
Pig iron, cast iron, related materials	thousand metric tons	821	134	Venezuela 205; Trinidad and Tobago 71; unspecified 315.
Ferroalloys:				
Ferrochromium		11,002,828	3,023,312	Kazakhstan 2,257,875; Turkey 453,202; unspecified 820,312.
Ferromanganese		19,438,868	730,452	China 14,215,570; France 3,331,464; South Africa 1,142,722.
Ferromolybdenum		1,838,559	394,125	China 1,210,375; Chile 63,203; Singapore 45,195.
Ferronickel		291	--	Unspecified 291.
Ferrosilicochromium		9,250	--	Unspecified 9,250.
Ferrosilicomanganese		15,378,837	224,808	Venezuela 9,126,417; China 5,905,539; South Africa 100,167.
Ferrosilicon		36,049,484	10,285,101	China 18,888,460; Venezuela 4,476,425; Brazil 1,858,250.
Ferrotitanium and ferrosilicotitanium	metric tons	933	344	United Kingdom 152; Germany 108; unspecified 245.
Ferrovanadium		831,903	257,500	South Africa 316,750; Switzerland 63,328; Canada 61,535.
Ferroniobium		925,569	97,757	Brazil 819,375; Canada 8,437.
Silicon metal		13,468,055	2,187,562	China 10,117,820; Brazil 501,250; Canada 377,062.
Steel, primary forms	metric tons	612,081	263,502	Venezuela 180,437; Canada 60,265; Trinidad and Tobago 11,165.
Semimanufactures:				
Flat-rolled products:				
Of iron or nonalloy steel:				
Not clad, plated, coated	do.	14,874,973	12,574,247	Japan 669,382; Republic of Korea 513,783; Germany 347,065.
Clad, plated, coated	value, thousands	$688,622	$314,244	Japan $204,555; Germany $134,669; Republic of Korea $99,510.
Of alloy steel	metric tons	2,263,218	550,259	Germany 315,393; Republic of Korea 186,573; Italy 134,542.
Bars, rods, angles, shapes, sections	do.	6,608,743	5,778,178	Canada 203,656; Brazil 102,033; unspecified 117,878.
Rails and accessories		59,263,024	56,594,080	Canada 727,479; Spain 534,113; Austria 328,984.
Wire	metric tons	965,694	917,042	Spain 6,613; Japan 6,214; France 5,780.
Tubes, pipes, fittings	do.	18,628,831	18,188,432	China 56,815; Germany 45,118; Argentina 39,877.
Lead:				
Ore and concentrate	do.	41,222	1,183	Serbia and Montenegro 21,427; Peru 7,215; Bulgaria 5,912.
Oxides		1,274,259	1,083,409	Spain 122,398; Republic of Korea 24,902; Germany 22,351.
Ash and residue containing lead		1,931,375	1,931,375	
Metal including alloys:				
Scrap		12,639,320	11,762,945	Japan 876,375.
Unwrought		56,538,652	42,398,104	Canada 11,050,269; Peru 2,504,625; Bulgaria 423,625.
Semimanufactures	metric tons	397,241	374,049	Republic of Korea 13,439; Japan 5,575; China 2,993.
Lithium oxides and hydroxides		4,830,765	125,183	Japan 4,685,984; China 18,550; unspecified 1,048.
Magnesium, metal including alloys:				
Scrap		192,484	178,484	China 14,000.
Unwrought	metric tons	186,181	183,494	China 1,832; Canada 841; Germany 9.
Semimanufactures	do.	322,064	321,560	Canada 202; China 132; South Africa 69.
Manganese:				
Ore and concentrate	do.	100,026	180	Australia 76,812; Gabon 20,070; Austria 2,927.
Oxides		1,560,822	1,537,937	Germany 11,625; France 9,250; unspecified 2,010.
Metal including alloys, all forms		5,994,905	3,626,312	China 1,960,625; Germany 151,660; South Africa 115,007.
Mercury		329,923	328,687	Netherlands 722; France 492; Germany 22.

See footnotes at end of table.

TABLE 4--Continued
MEXICO: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity		Total	Sources	
			United States	Other (principal)
METALS--Continued				
Molybdenum:				
Ore and concentrate:				
Roasted	value	$1	--	Unspecified $1.
Unroasted		10,548,924	3,617,625	Chile 4,362,296; Canada 2,569,000; unspecified 3.
Oxides and hydroxides		273,846	189,019	China 64,000; Chile 18,078; Germany 1,437.
Metal including alloys:				
Scrap and unwrought		383,062	376,312	China 6,750.
Semimanufactures		10,652,170	7,589,768	Hungary 2,859,874; China 143,948; South Africa 29,628.
Nickel:				
Matte and speiss		24,433	--	All from China.
Oxides and hydroxides		965,853	855,875	Netherlands 46,921; Canada 18,359; Finland 18,261.
Metal including alloys:				
Scrap		24,207	24,207	
Unwrought		4,338,565	2,076,187	Canada 1,049,500; Finland 594,187; unspecified 296,647.
Semimanufactures	metric tons	107,034	92,098	China 2,424; Germany 281; Sweden 184.
Platinum-group metals, metal including alloys, unwrought and partly wrought:				
Palladium		41,729	38,186	Switzerland 2,648; unspecified 895.
Platinum		1,091,212	1,075,872	Japan 5,888; China 4,912; Canada 4,158.
Rhodium		34,224	2,407	China 31,416; Italy 401.
Iridium, osmium, ruthenium		3,845	3,845	
Rare-earth metals including alloys, all forms		514,730	59,230	China 455,500.
Selenium, elemental		153,202	75,503	Germany 74,199; Belgium 3,500.
Silicon, high-purity		2,749	--	China 515; unspecified 2,234.
Silver:				
Ore and concentrate		17,900,964	--	Bolivia 10,943,920; Peru 6,820,400; Spain 136,245.
Metal including alloys, unwrought and partly wrought	metric tons	850,920	735,015	Israel 115,623; Hungary 126; unspecified Asia 89.
Tin:				
Ore and concentrate		60,261	60,039	Italy 222.
Metal including alloys:				
Scrap		65,772	61,585	Republic of Korea 4,187.
Unwrought		6,145,654	5,207,250	Bolivia 502,941; Germany 142,085; Canada 109,702.
Semimanufactures	metric tons	378,826	112,555	Republic of Korea 203,822; China 30,710; Japan 17,803.
Titanium:				
Ore and concentrate	do.	256,072	399	Australia 111,337; India 60,052; Canada 39,534.
Oxides		6,613,665	1,552,125	Germany 2,134,875; Italy 929,250; Ukraine 503,812.
Metal including alloys:				
Unwrought, waste or scrap, powders		247,906	247,906	
Semimanufactures		12,978,184	12,617,612	United Kingdom 159,261; Japan 35,878; unspecified 33,401.
Tungsten:				
Ore and concentrate		21,039	--	All from Italy.
Metal including alloys:				
Powders (wolfram)		64,989	52,796	Canada 12,062; Germany 70; France 61.
Unwrought, bars/rods simply sintered, scrap		483,719	417,687	Japan 63,496; Austria 1,312; Canada 859.
Semimanufactures		20,787,308	18,180,932	Hungary 1,209,944; Japan 1,135,226; China 53,769.
Vanadium:				
Oxides and hydroxides		183,609	1,750	Spain 174,984; South Africa 6,500; Italy 375.
Metal including alloys, all forms		300	300	
Zinc:				
Ore and concentrate		8,724,824	9,812	Peru 8,714,980; unspecified 32.
Oxides	metric tons	17,794	16,334	Canada 316; Republic of Korea 278; unspecified Asia 327.
Blue powder		11,720,629	11,717,722	Italy 2,125; Australia 722; Ireland 49.
Ash and residue containing zinc	metric tons	142,463	142,463	

See footnotes at end of table.

TABLE 4--Continued
MEXICO: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity		Total	Sources	
			United States	Other (principal)
METALS--Continued				
Zinc--Continued:				
Metal including alloys:				
Scrap		34,726	34,726	
Unwrought		26,038,142	25,359,874	Republic of Korea 376,687; Guatemala 289,250; Canada 5,437.
Semimanufactures	metric tons	265,585	261,418	Japan 3,176; China 597; Peru 102.
Zirconium:				
Ore and concentrate		21,426,468	17,931,722	Ukraine 2,631,375; Australia 273,812; South Africa 217,183.
Metal including alloys:				
Unwrought, waste or scrap, powders		246	246	
Semimanufactures		116,931	102,019	United Kingdom 2,625; Japan 62; unspecified 12,225.
Other, ash and residue	metric tons	145,358	145,348	Germany 10.
INDUSTRIAL MINERALS				
Abrasives, n.e.s.:				
Natural: Corundum, emery, pumice, etc.	do.	101,962	71,108	Hong Kong, China 13,174; China 8,226; Turkey 4,591.
Artificial:				
Corundum		19,923,382	7,389,972	China 7,119,394; Brazil 1,769,500; United Kingdom 1,403,187.
Silicon carbide		24,496,104	5,071,460	China 15,157,062; Brazil 2,442,625; Venezuela 944,000.
Dust and powder of precious and semiprecious stones including diamond	value, thousands	$1,690	$1,336	Ireland $153; Hong Kong, China $81; United Kingdom $44.
Grinding and polishing wheels and stones	metric tons	1,656,462	1,621,853	Japan 13,741; China 5,762; unspecified Asia 3,946.
Asbestos, crude		18,671,228	147,988	Brazil 11,176,601; Canada 7,045,765; Zimbabwe 286,437.
Barite and witherite	metric tons	137,079	7,963	China 66,405; India 59,716; Guatemala 2,845.
Boron materials:				
Crude natural borates		9,507,686	6,035,999	Chile 1,855,562; Turkey 1,237,812; Peru 155,093.
Oxides and acids		17,716,254	13,528,218	Chile 2,745,687; Peru 434,437; China 182,617.
Cement	metric tons	130,473	118,224	France 4,397; China 2,751; Thailand 2,280.
Chalk		424,972	146,195	China 132,132; Netherlands 72,152; Italy 56,218.
Clays, crude:				
Bentonite	metric tons	126,791	104,120	India 21,200; Spain 595; China 294.
Chamotte earth and Dinas earth		99,342	70,109	Canada 20,796; Bulgaria 8,437.
Fire clay	metric tons	157,623	154,033	China 3,549; Germany 17; unspecified 23.
Fuller's earth	do.	6,876	1,103	Morocco 5,553; United Kingdom 28; unspecified 187.
Kaolin	do.	422,751	414,444	France 3,831; Spain 2,849; China 746.
Diamond, natural:				
Gem, not set or strung	value, thousands	$148,982	$34,125	India $111,327; Belgium $1,233; Hong Kong, China $953.
Industrial stones	value	$1,007,986	$911,222	Botswana $52,117; Ghana $30,420; Australia $5,819.
Dust and powder	value, thousands	$1,690	$1,336	Ireland $153; Hong Kong, China $81; United Kingdom $44.
Diatomite and other infusorial earth		9,444,994	9,301,953	United Kingdom 88,109; Spain 23,679; unspecified 17,253.
Feldspar		5,155,718	5,046,437	France 28,851; Germany 20,636; unspecified 33,220.
Fertilizer materials:				
Crude, n.e.s.		465,980	437,125	Spain 28,855.
Manufactured:				
Ammonia	metric tons	89,347	58,297	Republic of Korea 29,380; Germany 83; unspecified 1,511.
Nitrogenous	do.	1,575,161	487,710	Ukraine 276,484; Norway 32,601; unspecified 647,780.
Phosphatic		1,307,426	1,084,187	France 50,781; Cuba 44,679; Finland 41,000.
Potassic	metric tons	280,230	142,093	Canada 88,515; Chile 19,808; unspecified 22,635.
Unspecified and mixed	do.	2,971,481	1,307,034	Ukraine 276,484; Canada 89,577; unspecified 940,792.
Fluorine minerals, natural:				
Feldspar		5,155,718	5,046,437	France 28,851; Germany 20,636; unspecified 33,220.
Fluorspar		19,453,358	509,835	Kenya 18,943,524.
Leucite, nepheline, nepheline syenite	metric tons	120,716	117,291	Canada 3,224; Spain 202; unspecified (1).
Graphite, natural		8,852,534	4,979,937	Japan 1,856,874; China 1,511,625; Madagascar 150,339.
Gypsum and plaster		40,644,356	38,421,156	United Kingdom 1,170,500; Guatemala 427,437; China 181,457.
Iodine		10,393,504	10,006,699	Chile 240,363; Germany 121,488; unspecified 21,579.

See footnotes at end of table.

TABLE 4--Continued
MEXICO: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity		Total	Sources	
			United States	Other (principal)
INDUSTRIAL MINERALS--Continued				
Kyanite and related materials:				
Andalusite, kyanite, sillimanite		1,646,437	1,646,437	
Mullite		12,058,295	11,681,214	China 377,062; unspecified 19.
Lime		14,821,106	14,668,331	Indonesia 33,093; Netherlands 12,187; unspecified 107,495.
Magnesium compounds:				
Magnesite, crude		491,925	269,000	China 64,175; Canada 42,730; South Africa 37,480.
Oxides and hydroxides		74,770,392	20,318,742	China 50,835,836; Spain 2,085,937; Canada 670,187.
Other		1,910,776	1,073,437	Germany 797,125; Japan 20,000; unspecified 20,214.
Mica:				
Crude including splittings and waste		5,441,559	2,572,229	Morocco 1,886,312; Canada 538,875; China 144,824.
Worked including agglomerated splittings		9,796,267	9,027,437	Spain 231,401; China 198,164; Japan 135,077.
Nitrates, crude		1,408,807	129,464	Chile 975,125; Israel 129,464; unspecified 93.
Phosphates, crude	metric tons	1,091,653	717	Morocco 1,059,214; Japan 22; Indonesia (1).
Phosphorus, elemental		6,629,069	1,003,062	China 3,922,875; Japan 1,372,562; Hong Kong, China 288,625.
Pigments, mineral, iron oxides and hydroxides, processed	thousand metric tons	59	30	United Kingdom 18; Germany 3; Republic of Korea 3.
Precious and semiprecious stones other than diamond:				
Natural	value, thousands	$12,952	$7,598	India $3,065; South Africa $414; China $400.
Synthetic	do.	$2,088	$734	China $407; India $248; Hong Kong, China $215.
Pyrite, unroasted		921,971	555,437	Italy 164,375; Brazil 80,773; Austria 60,800.
Quartz crystal, piezoelectric	value	$113,408	$22,330	United Kingdom $64,524; Japan $20,311; Germany $4,316.
Salt and brine	metric tons	517,792	502,926	Netherlands Antilles 12,825; Germany 566; Canada 470.
Sodium compounds, n.e.s., natural and/or manufactured:				
Soda ash	do.	691,679	689,201	China 2,369; Germany 85; Japan 17.
Sulfate		51,838,304	51,592,384	France 122,648; Japan 63,480; Germany 53,601.
Stone, sand and gravel:				
Dimension stone:				
Crude and partly worked		24,146,108	11,641,876	Spain 6,276,296; Turkey 1,956,187; Italy 1,174,115.
Worked	metric tons	119,395	37,985	Spain 42,494; Brazil 14,884; Italy 12,705.
Dolomite, chiefly refractory-grade		68,270,192	6,294,640	Canada 58,479,576; Italy 1,785,812; Guatemala 849,875.
Gravel and crushed rock		15,556,676	13,614,408	China 991,194; France 510,875; Italy 221,394.
Limestone other than dimension		88,913	84,726	India 4,187.
Quartz and quartzite		50,574,088	49,363,192	Spain 649,062; Chile 211,425; Brazil 201,582.
Sand other than metal-bearing	metric tons	833,812	827,848	Canada 1,975; China 1,597; unspecified Asia 758.
Sulfur:				
Elemental:				
Crude including native and byproduct		38,033,372	37,926,072	Canada 90,074; Germany 13,437; unspecified 3,792.
Colloidal, precipitated, sublimed		184,382	97,195	Canada 58,000; Belgium 13,625; unspecified 12,812.
Dioxide		25,429	25,312	Unspecified 117.
Sulfuric acid	metric tons	112,085	11,129	Sweden 33,213; Canada 31,728; Italy 12,339.
Talc, steatite, soapstone, pyrophyllite	do.	143,228	127,825	China 13,551; Australia 924; Japan 468.
Vermiculite, perlite, chlorite		22,267,216	19,399,414	China 1,763,812; South Africa 950,000; Canada 97,230.
Other, slag and dross, not metal-bearing		57,898,025	43,586,548	Netherlands 7,537,539; South Africa 4,808,167; Canada 721,062.
MINERAL FUELS AND RELATED MATERIALS				
Asphalt and bitumen, natural		32,835,404	31,212,078	China 1,325,687; Malaysia 156,789; Hong Kong, China 124,476.
Carbon black		10,814,865	9,936,859	Germany 538,437; Canada 165,675; India 49,375.
Coal:				
Anthracite		55,337,336	3,051,000	Vietnam 29,563,000; China 18,324,424; Colombia 4,387,000.
Bituminous	metric tons	6,760,454	1,045,578	Australia 5,171,366; Canada 538,842; Colombia 3,566.
Briquets of anthracite and bituminous coal		945,812	437,875	Colombia 507,937.
Lignite including briquets		4,575,078	4,556,500	Finland 18,578.
All grades including briquets	metric tons	6,821,626	1,053,934	Australia 5,171,366; Canada 538,842; Colombia 8,461.

See footnotes at end of table.

TABLE 4--Continued
MEXICO: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity		Total	Sources	
			United States	Other (principal)
MINERAL FUELS AND RELATED MATERIALS--Continued				
Coke and semicoke	metric tons	570,275	195,605	China 186,426; Colombia 99,589; Japan 86,093.
Gas:				
Manufactured		11,687	11,687	
Natural:				
Gaseous	thousand metric tons	208,388	208,388	Netherlands (2).
Liquefied	do.	462,885	462,885	
Peat including briquets and litter		19,843,076	1,925,312	Canada 15,756,515; Finland 1,011,187; Denmark 434,937.
Petroleum:				
Crude		9,562	--	All from Switzerland.
Refinery products:				
Liquefied petroleum gas	metric tons	2,713,562	2,202,988	Algeria 229,259,180; Norway 114,255,522; Nigeria 77,111,188.
Mineral jelly and wax	do.	250,319	148,296	China 93,705; Brazil 2,687; Germany 1,299.
Asphalt	do.	127,509	127,509	Unspecified (2).
Bitumen and other residues	value, thousands	$24,247	$24,247	China $1; unspecified (2).
Bituminous mixtures		92,992,568	84,853,312	China 5,968,070; Japan 614,000; unspecified Asia 956,062.
Petroleum coke	metric tons	2,338,978	2,264,728	Venezuela 58,874; Japan 12,297; China 1,392.
Unspecified	thousand metric tons	15,248	12,975	Saudi Arabia 525; Bahamas 251; Netherlands Antilles 174.
Uranium and thorium, oxides and other compounds		9	9	

[1]Less than 1/2 unit.

Source: United Nations Statistics Division, Commodity Trade Statistics Database (COMTRADE), accessed at URL http://unstats.un.org/unsd/comtrade/dqBasicQueryResults.